

BULLETIN

OF

L 37 - 1

THE CHARLESTON MUSEUM

EDITED BY
PAUL M. REA

Vols. I-V
1905—1909

LIBRARY
NEW YORK

CHARLESTON, S. C.
1909

PRINTED FOR THE MUSEUM BY
THE DAGGETT PRINTING CO.
CHARLESTON, S. C.

The Charleston Museum

UNDER THE AUSPICES OF THE COLLEGE OF CHARLESTON

Director

PAUL M. REA

Librarian

LAURA M. BRAGG

Honorary Curators

WM. G. MAZYCK.....	<i>Conchology</i>
DANIEL S. MARTIN.....	<i>Geology</i>
ARTHUR T. WAYNE.....	<i>Ornithology</i>
NATHANIEL W. STEPHENSON.....	<i>Art</i>

THE CHARLESTON MUSEUM was in existence as early as 1777 under the auspices of the Charleston Library Society, was transferred to the Literary and Philosophical Society of South Carolina in 1815, to the Medical School in 1828, and to the College of Charleston in 1850. In 1907 a building was provided by the City and the name changed to The Charleston Museum.

The Museum is dependent upon dues from members and private subscriptions for all permanent improvements, for increase of the collections, and for maintenance of its educational and scientific work.

The membership fees are:—

ANNUAL MEMBERS.....	\$ 10	PATRONS.....	\$ 500
SUSTAINING MEMBERS.....	25	BENEFACTORS.....	1000

The privileges of members include admission on pay days, tickets to members' lecture courses, and copies of Museum publications.

THE BULLETIN OF THE CHARLESTON MUSEUM is published monthly, from October to May, by the Museum and is entered at the Post Office at Charleston, S. C., as second class matter.

The Bulletin of the College of Charleston Museum is published monthly from October to May and is devoted to descriptions of exhibits, reports of lectures, and notes from the Museum. Application made at the post office at Charleston, S. C. for entry as second-class matter.

BULLETIN OF THE COLLEGE OF CHARLESTON MUSEUM

EDITED BY PAUL M. REA
CURATOR OF THE MUSEUM AND PROFESOR OF BIOLOGY

Vol. 1 CHARLESTON, S. C., APRIL, 1905 No. 1

MUSEUMS OF NATURAL HISTORY AND THEIR WORK*

Until very recently the botany taught in our schools and colleges was devoted almost exclusively to identification and systematic arrangement of the flowering plants and ferns. Now all this is changed and a "new" botany is firmly established which studies the principles underlying the structure and behavior of plants and relegates details of classification to specialists. Zoology underwent a similar but perhaps more gradual transformation some time ago and in both of these cases the cause is to be sought in a general change in the aims of biology. Each phase of this movement is conspicuously shown in the history of our natural history museums.

In the latter part of the eighteenth century the study of natural history received a tremendous impetus from the labors of the great Swedish naturalist, Linnaeus. At that time there was great confusion in the nomenclature and classification of both animals and plants. Linnaeus showed untiring zeal in collecting and great genius in classifying. To each

* A public lecture by Profesor Rea on the occasion of the opening of Manigault Hall as a lecture room.

form he gave two names, a generic and a specific. Thus the common cat is called *Felis domestica* and the lion *F. leo*, while the dog is *Canis familiaris*. To these binomial designations it is customary to add the abbreviated name of the person who first used them. So the full scientific name of the cat is *Felis domestica* Linn.

The systematic work of Linnaeus was continued by his followers and great collections were built up which had an increasing value as time went on, for sometimes doubt would arise as to the real identity of a form or whether forms described under different names were not after all the same. In such cases the necessity of comparing the original specimens, or *types*, is obvious. In order to care properly for natural history collections and render them easily accessible museums were formed and of course the arrangement of the museums was "systematic," i. e. according to the scheme or system of classification adopted.

The chief aim of biology at this time was to name and file away the largest possible number of forms. Structure was carefully studied so far as it contributed to this end but, unfortunately, the investigation was considered complete as soon as the specimen was mounted and labeled. Museums were indispensable tools of science in this period and served as books of reference do in our libraries.

The publication in 1859 of Darwin's *Origin of Species* checked the scramble after new species and stimulated a search for more fundamental principles in biology. Field and museum alike were searched for evidence of variation and complaints began to arise because museum collections were inadequate for such studies. Hitherto museums had been quite content with a few duplicates of convenient specimens and the forms which varied from the type had been an unmitigated nuisance to naturalists because of the difficulty of classifying them. Now, not only are many duplicates desired for study of variations but adaptations of every description, homologies, and life-histories are eagerly sought and

with all these come opportunities such as the older museums never knew. Let us, then, look somewhat minutely into the work of a modern museum of natural history that we may better appreciate its achievements and condone its shortcomings.

As soon as a specimen is received at the museum it is referred to the proper authority for identification. Members of the staff of large museums are usually able to identify specimens but they sometimes have to be sent away to specialists. As soon as the specimen is identified it receives an accession number which is marked upon it in the most permanent manner possible. Under this number in an accession book is entered all the available information about the specimen, which is then placed in the study collection or on public exhibition. From the accession record a catalogue card is prepared and filed alphabetically for ready reference. Beside the accession number and the name of the specimen the card bears a location mark which shows where the specimen is at any time.

The larger museums have both study or research collections and exhibition collections but many of the smaller institutions are confined to the latter. The study collection is, however, the basis of all active work in a museum. It does not make an impressive appearance because most of the specimens are unmounted and are packed away in trays and drawers. Yet here are many of the invaluable types, all the duplicates, and all specimens not on exhibition. It is a great mistake for a museum to exhibit all its material at one time, for very much more interesting and instructive exhibits can be prepared by judicious selection of specimens. The study collection is used for research and study by all properly qualified persons and it should be conveniently arranged and provided with well lighted tables and a good working library.

The organization of the exhibition collections is a more complex problem and demands sound judgment as well as the highest degree of technical skill. In order to accomplish the best results a specimen should never be exhibited except

for a definite purpose and then no pains should be spared to make the fulfillment of that purpose as complete as possible. Many things contribute to this result. One which requires special care is designing cases which give adequate protection to specimens and at the same time detract as little as possible from their appearance. Wherever it can be done each side of a case should consist of one sheet of glass only and the corners should show only as much wood as is necessary. Since the lighting of exhibition rooms is preferably from skylights or windows high in the wall, the tops of cases should be made of glass. The doors must be dust and insect proof at all costs. In order to facilitate a rearrangement of material at any time "unit" cases are often used which are interchangeable throughout the museum.

When skins are to be stuffed the very best taxidermy is required to avoid mere caricatures which convey more false than true impressions of the unfortunate animal. The best mounting includes the reproduction of the typical environment of the animal. So bison are represented on a bit of prairie and beavers in their forest haunts. In this work there are many pitfalls for the novice and perhaps nowhere is the difference between excellence and mediocrity more conspicuous. When specimens are preserved in fluid many shapes and sizes of receptacles are needed. Cylindrical jars were formerly the only shape available but they distort the appearance of specimens by acting as lenses. Recently rectangular jars have been produced which obviate this difficulty. Snakes and worms coiled in bottles show only one side and are often best displayed in tubes. Brilliantly colored forms like squids, fishes, and lizards inevitably fade whether they are stuffed or preserved in fluids. The most satisfactory method of exhibiting these forms is by the use of casts and models colored accurately from fresh specimens. The use of models also gives an opportunity of getting more natural poses and environment. In this way lizards can be shown on typical desert rocks. Wherever this method is used the act-

ual specimens are preserved for reference in the study collection.

When the specimens are finally prepared and arranged the making of labels is in order. Before even beginning to write labels one should know enough to write a book about the specimens. Then the facts most essential for the purpose in hand must be selected and arranged in a form pleasing to the eye, for poor typography may spoil the whole effect. Labels are always in danger of becoming separated from their specimens, but since both bear the accession number they are easily brought together again. It is often desirable to put the accession number on the shelf where each specimen belongs to facilitate restoring the specimens after temporary removal. The accession number is thus the key to the whole record of each specimen and if it becomes obliterated the specimen is sometimes almost worthless.

It may well be asked, What is the purpose of museum exhibits that such extraordinary care is required in the details of their preparation? It is always to attract and hold attention until a definite and lasting impression can be made on the mind of the observer. Museums are continually striving to correct the tendency which most people have to go through the whole collection and get a glimpse of each specimen all in a single visit. Nothing is more fatiguing than "doing" museums in this manner and the confused impression which results from the ordeal is a poor return for the time and energy consumed in forming it. If you would really enjoy a visit to a museum go and see a very few things, learn enough to feel personally acquainted with them, and come away before you are tired. Modern museums encourage this practice in two ways. They prepare special exhibits which are made the chief attractions for limited periods of time and they frequently arrange lectures based on these special exhibits. Such lectures are especially valuable in providing a definite object for each visit. The preparation of special exhibits involves much labor and expense, and

the museum naturally wishes to know the relative attractive value of various kinds of exhibits. For this purpose registering turnstiles are used to record the number of visitors.

A brief account of the College of Charleston Museum may be appropriately given here for the purpose of showing the work which it is fitted to do and the difficulties which confront it. Such an account will complete the general discussion of our subject by disclosing the vicissitudes of many of the natural history museums of this country. The Museum was organized in 1850 as a result of the interest in natural history aroused by Louis Agassiz and that famous coterie of scientific men who lent luster to the culture of Charleston in the first half of the nineteenth century. The Museum received the older private collections of Elliot, Holbrook, Audubon, Tuomey, and Holmes. At about this time museums of natural history were established in a great many other colleges in this country. The animus of them all was the old systematic natural history and they had no sooner gotten fairly started than the interest in that form of science began to wane under pressure of the new Darwinian biology. Most of these museums were unable to adapt themselves to the new conditions and so have gradually drifted into neglect and decay. This Museum was fortunately preserved from the common fate by the devotion of its curators, Professor Holmes and Dr. Manigault, under whose care the collections have greatly increased and come down to us fairly well preserved, in spite of war, fire, and earthquake. To-day this is considered the largest museum in the South. The study collection includes the Stephen Elliott herbarium, rich in types and frequently consulted by botanists from all parts of the country. This herbarium is now being renovated and a printed report on its present condition will soon be published. A suitable safe is needed to protect this herbarium from the ravages of insects and danger of fire. The exhibition specimens are nearly all of very good quality and this is especially true of the mammals. To the work of Professor Ashley, recently

curator of the Museum is due the beginning of a modern arrangement of the collections but this work is very difficult because of the crowded ill-lighted rooms, the difficulty of moving many of the cases, and the entire lack of storage room. Hitherto no proper accession record has been kept but a beginning of this work is now being made. A card catalogue was prepared by Professor Ashley and is being continued. Many of the labels in this Museum are more than thirty years old and need to be renewed.

Museums obtain new material by gift, by purchase, and by exchange. A museum should always possess an abundance of local material for exhibition. If a quantity is also available for exchange it is quite as valuable as an increased appropriation. Charleston is situated in the midst of phosphate deposits which yield a rich variety of fossils and the Museum has one very handsome case of these but it could easily have the largest and most complete collection of the sort in this country. There are many barrels of these fossils in Charleston which have very little value to their owners. If these could be given to the Museum the best specimens would form a noteworthy exhibit and the remainder would bring to the Museum by exchange material which cannot be obtained by purchase.

In addition to the routine work of accessioning the collections the present plans of the Museum include the preparation of special exhibits, provided with descriptive labels and supplemented by illustrated lectures in Manigault Hall. To encourage and assist regular visitors the Museum has undertaken the publication of this monthly *Bulletin*, devoted to descriptions of exhibits, reports of lectures, and general information about the Museum. The *Bulletin* is intended to take the place of a museum guide for all visitors and to make public the work of the Museum.

NOTES FROM THE MUSEUM

The Museum is open to the public on Saturdays from 10 to 5 and on other week-days from 10 to 12 and 1 to 5. Children unaccompanied by an adult are admitted only on Saturdays.

Professor Rea's lecture on "Museums of Natural History and Their Work" was illustrated with lantern slides and specimens of good and bad mounting from the Museum collections. One of the best examples of skillful taxidermy in the Museum is a group of English pheasants which was purchased this month and exhibited for the first time at the lecture. It includes a cock, standing on an old stump, while the hen crouches almost out of sight in the tall grass of the bog and eight little chicks are busily looking for food. Each bird is in a perfectly natural pose and the group shows the habits as well as the form and coloring of the English pheasant. Visitors to the Museum should not fail to see this new exhibit.

The need of a suitable lecture room in the Museum has been met by the recent alterations in Manigault Hall. A rearrangement of the archaeological collections has secured a large floor space and the room has been provided with a platform with a reading desk and a long table for display of specimens, a sliding blackboard, and screens and electric lights for the use of a new projection apparatus which will be a prominent feature of the Museum lectures. This apparatus uses an electric lantern for projecting on a screen both stereopticon and microscopic slides and makes it possible to show the living animals and plants in a drop of water.

The Museum wishes to receive gifts of phosphate fossils in any quantity and of large garden slugs alive.

The Bulletin is published monthly from October to May by the College of Charleston and is devoted to descriptions of exhibits, reports of lectures, and notes from the Museum. Application made at the post office at Charleston, S. C. for entry as second-class matter.

BULLETIN

OF THE

COLLEGE OF CHARLESTON MUSEUM

EDITED BY PAUL M. REA

CURATOR OF THE MUSEUM AND PROFESSOR OF BIOLOGY

Vol. 1	CHARLESTON, S. C., MAY, 1905	No. 2
--------	------------------------------	-------

CONTENTS

Charleston Natural History Society	-	Page 10
Constitution	- - -	Page 11
Theory of killing and preserving	- -	Page 15
Special directions for summer collecting	-	Page 17

CHARLESTON NATURAL HISTORY SOCIETY

At the suggestion of Professor Rea, the Curator of the Museum, a meeting was held in the College Library May 11th. to consider plans for the formation of a natural history society. Fifteen students were present and after a general discussion of the purpose of the meeting it was unanimously decided to form a society and a committee was appointed to draft a constitution.

In these days when so many of the old scientific societies have gone out of existence for lack of interest and support some apology may be required for the formation of a new natural history organisation. To this end Professor Rea explains that there are several students in college and other persons about Charleston who are interested in natural history but who have no training in collecting and no way of caring for material which they may get. It should be a part of the work of the Museum to stimulate and assist such persons and as a first step in this direction the Charleston Natural History Society is formed under the auspices of the Museum as a means of bringing together persons who are interested in this subject and extending to them the facilities of the Museum and such instruction as it can give in methods of observing, collecting, identifying, and preserving specimens. One of the most valuable features of the society will be the exchange of experience among members and the accumulation of records of observations. The Museum will loan glassware and supply preserving and killing fluids and in return it is expected that most of the specimens obtained will be given to the Museum.

The organisation of the society is intended to be as plastic as possible in order that it may not interfere with other duties of members. The curator of the Museum is, *ex-officio*, director of the Scientific work of the society and plans the work in consultation with an executive committee composed of the officers of the Society, to whom is given the carrying

out of the plans. The work of members consists in making and recording observations of natural history, and in collecting, killing, preserving, and identifying specimens. All specimens are deposited with the proper officers of the club and must in all cases be accompanied by a carefully prepared written report, which is not accepted by the society until approved by the director. Members are not required to accomplish any specified amount of work for the society but they must have at least one regular report accepted each six months. The meetings of the society are devoted to reports of members and scientific discussions. The membership is not confined to students of the college and all persons interested in natural history are invited to join.

CONSTITUTION

ARTICLE I. NAME AND PURPOSE

Sec. 1. *Name.* The name of this organization shall be THE CHARLESTON NATURAL HISTORY SOCIETY.

Sec. 2. *Purpose.* The purpose of the Society shall be the study of natural history and the development of the College of Charleston Museum.

Sec. 3. *Official Organ.* The official organ of the Society shall be the *Bulletin of The College of Charleston Museum.*

ARTICLE II. OFFICERS

Sec. 1. *Names of Officers.* The officers of the Society shall be: a Director, a President, a Vice-President, a Secretary, and a Treasurer.

Sec. 2. *Duty of the Director.* It shall be the duty of the Director to plan the scientific work of the Society in consultation with the Executive Committee, of which he shall be the chairman, and to examine all reports of members.

Sec. 3. *Duty of the President.* It shall be the duty of the President to represent the Executive Committee in car-

rying on the Scientific work of the Society, to preside at all meetings, and to perform all duties usually pertaining to this office.

Sec. 4. *Duty of the Vice-President.* It shall be the duty of the Vice-President to perform all the duties of the President in his absence.

Sec. 5. *Duty of the Secretary.* It shall be the duty of the Secretary to keep minutes of all meetings of the Society and of the Executive Committee, to receive all reports of members, to submit the same to the Director for examination, and to perform all duties usually pertaining to this office.

Sec. 6. *Duty of the Treasurer.* It shall be the duty of the Treasurer to collect all moneys due the Society, to make all disbursements authorized by the Society, and to keep an account of all receipts and expenditures. It shall also be the duty of the Treasurer to receive and care for all properly prepared specimens deposited by members, and to place the same in the Museum when called upon by the Director. It shall be the further duty of the Treasurer to keep a record of all supplies furnished to each member and of all specimens received from him.

Sec. 7. *Executive Committee.* The officers of the Society shall constitute an Executive Committee, with the Director as chairman, and it shall be the duty of the committee to assist the Director in planning the scientific work of the Society. It shall also be the duty of the Executive Committee to nominate, at least one week previous to each election, such active members as are best qualified for office.

ARTICLE III. ELECTION OF OFFICERS

Sec. 1. *Time of Election.* Officers for the ensuing six months shall be elected at the regular meeting in May and in November.

Sec. 2. *Method of Election.* The Curator of the College of Charleston Museum shall be, *ex-officio*, the Director of the Society. All other officers shall be elected from the nominations of the Executive Committee by a majority of the votes cast. All elections shall be by ballot.

ARTICLE IV. MEMBERS

Sec. 1. *Kinds of Members.* Members shall be of four kinds: viz., Probationary, Active, Delinquent, and Honorary.

Sec 2. *Probationary Members.* All new members shall be probationary and shall be required to file with the Secretary an approved report within six months. Upon doing this they shall become active members or by failing to do this they shall become delinquent members as hereinafter provided. Any person may become a probationary member upon application to the Secretary and payment of the initiation fee to the Treasurer.

Sec. 3. *Active Members.* All members who have filed with the Secretary at least one approved report within six months shall be active members and shall remain active members as long as they file with the Secretary at least one approved report every six months.

Sec. 4. *Delinquent Members.* All members who have not filed with the Secretary at least one approved report within six months shall be delinquent members and shall have no vote. Delinquent members become active upon filing with the Secretary an approved report. Delinquent members of six months' standing shall be dropped from the rolls, but may join as new members at any time.

Sec. 5. *Honorary Members.* Any person may be nominated by the Executive Committee for honorary membership and may be elected by two-thirds of the voting members present at any regular meeting. Honorary members shall be exempt from all fees and assessments.

Sec. 6. *Reports of Members.* All scientific work done by members for the the Society shall be presented in the form of a written report which shall be filed by the Secretary when it has been approved by the Director.

ARTICLE V. MEETINGS.

Sec. 1. *Regular Meetings.* Regular Meetings shall be held once each month during the college year at a time to be decided by a majority of the voting members.

Sec. 2. *Special Meetings.* Special Meetings may be called at any time at the discretion of the President or the Director, or at the request of any two members.

Sec. 3. *Quorums.* The voting members of the Society shall consist of the active and probationary members. A quorum for election of officers or for any financial question shall consist of half of the voting members. A quorum of the Executive Committee shall consist of the Director and two others.

ARTICLE VI. FEES AND ASSESSMENTS.

Sec. 1. *Initiation Fee.* All applicants for membership shall pay to the Treasurer an initiation fee of fifty cents, which shall be given to the Director for the use of the Museum.

Sec. 2. *Assessments.* Members may be assessed for any purpose by two-thirds of the voting members present at any regular meeting.

Sec. 3. *Fines.* Any member failing to pay any legal assessment within one month shall be fined the amount of of the assessment, and failing to pay both the assessment and the fine within six months shall be dropped from the rolls, and shall be ineligible to join as a new member until all arrears shall have been paid.

ARTICLE VII. AMENDMENTS.

Sec. 1. *Constitutional Amendments.* This constitution may be amended upon a month's notice by two-thirds of the voting members present.

Sec. 2. *Amendments to By-Laws.* The By-Laws may be amended by two-thirds of the voting members present at any regular meeting.

THEORY OF KILLING AND PRESERVING.

Every collector of biological specimens should thoroughly understand the general theory of killing and preserving. On this depends not only the intelligent and successful use of the special methods that have been devised for particular cases, but what is far more important, the ability to devise methods adapted to any form.

Killing. No method of killing is satisfactory which distorts or mutilates the specimen, at least in parts which are intended for study. For this reason animals which are to be dissected or stuffed should not be shot if they can be captured in any other way. Chloroforming is the most convenient method of killing reptiles, birds, and mammals, though drowning is an admirable method when there is no objection to wetting the feathers or hair. The simplest way of killing small animals is by dropping them into strong (70-95%) alcohol, but many forms contract so strongly under this treatment as to make it entirely unsatisfactory. In these cases two courses of procedure are open. Death may be inflicted so suddenly that the animal actually has not time to contract or anaesthesia may be used to induce complete relaxation and unconsciousness before the animal is killed. The former method, sudden killing, may be accomplished by pouring strong acid mixtures or corrosive sublimate, hot, if necessary, over the specimens while they are relaxed. Hy-

droids may be killed in this way fully expanded. When the second method is followed anaesthesia may be induced in various ways. Earthworms soon become unconscious and perfectly relaxed in dilute (30-50%) alcohol, and may be killed in strong alcohol. The most generally useful anaesthetic is the vapor of chloroform. Specimens should never come in contact with the liquid. Marine animals are very easily and successfully killed by immersion in fresh water and vice versa.

Fixing. As soon as an animal dies decomposition processes begin to alter the structure of the tissues and in order to prevent these changes the natural structure must be "fixed." Nearly all sudden killing fluids fix tissues at the same time. After the use of anaesthetics, however, tissues should be fixed as soon as possible by immersion in the preserving medium. Successful fixation depends on bringing all the tissues quickly in contact with the fixing agent. To facilitate this an incision may be made to admit the fluid into large specimens. Fixation is synonymous with hardening and during the process specimens must be held in the position in which they are wanted permanently.

Preserving. In biological practice two preserving media are in general use. Tissues may be kept indefinitely in 70% alcohol or, if they are *thoroughly* fixed, even in the vapor of alcohol. Fresh tissues, however, contain much water and should be immersed in several times their bulk of full strength alcohol, which must be renewed after a few days if the specimens are large. Formalin is sold in 40% solution, 5-7% of which in water is sufficient to preserve animals as large as a cat. For smaller forms 1-4% formalin may be used. Formalin is much more economical than alcohol, does not extract so much water from the specimens, and does not evaporate so quickly and should therefore be used for preservation of all large animals. For smaller forms alcohol is probably simplest to use.

Summary. Small animals should be killed, fixed, and

preserved by immersion in strong alcohol but if this causes contraction and distortion they should first be anaesthetized and then fixed as soon as they are unconscious and relaxed. Large animals should be anaesthetized and then immersed in 4-7% formalin for fixing and preserving. All soft or distorted specimens should be immediately thrown away. When peculiar difficulties present themselves study these general principles carefully and experiment with all the means at hand until a successful method is attained; then make careful notes of your experiment.

SPECIAL DIRECTIONS FOR SUMMER COLLECTING

The Museum wishes to keep on hand for dissection several dozen of each of the following forms and each member of the Natural History Society should make these the basis of his work during the summer.

Earthworms. Where earthworms are abundant specimens the size of a lead pencil may be looked for on the surface of the ground at night. Use a light and avoid jarring the ground. Anaesthetize in 30-50% alcohol and transfer at once to 95% alcohol, holding each worm extended a moment till hardened. Select the perfectly straight specimens, roll them up in a strip of cloth and preserve in 95% alcohol, renewed after three days. Make full record of localities, habits, behavior, and methods of capturing and putting up.

Garden Slugs. Anaesthetize in 20% alcohol. A capsule of coagulated slime will form about each specimen. Cut this and roll the animal out and preserve in 95% alcohol. Experiment to find a method of killing these animals fully relaxed. Make careful report on the living animals and on methods of putting up.

Crawfishes. Kill, fix, and preserve in strong alcohol, changed once after three days, or in 3% formalin. Full written report.

Grasshoppers and Cockroaches. Take only the largest specimens and kill, fix, and preserve in strong alcohol or 3%

formalin.

Myriapods or Thousandlegs. Drop all kinds into 70% alcohol.

Frogs. Chloroform, fix in natural position and preserve in strong alcohol, renewed once after three days, or in 4% formalin.

Lizards. Treat like frogs, using special care to fix straight

Salamanders, Newts, Mud Puppies, and all other Tailed Amphibians. Those that breath by lungs may be chloroformed. Those that breath by gills may be immersed in water containing salt, or alcohol or formalin may be added slowly to the water. Fix carefully with all parts straight. Fill the abdominal cavity with fixing fluid. Preserve in 6% formalin or in strong alcohol, renewed after three days and again after ten days. In spite of all popular reports *none of these amphibia are poisonous.*

Half-grown Kittens. Take only clean specimens of the right size. Kill by drowning or chloroform, fix carefully and preserve in 7% formalin.

All specimens should be stored in wide mouthed bottles, tightly stoppered, glass fruit jars, earthenware jars, or tin pails tightly covered. All except the smaller specimens may be wrapped in white cotton cloth to advantage. Notes may be written on this cloth in lead pencil. The Museum will pay transportation charges on good material. This must be authorized in advance, however, after full written description.

The Bulletin is published monthly from October to May by the College of Charleston and is devoted to descriptions of exhibits, reports of lectures, and notes from the Museum. Entered at the postoffice at Charleston, S. C., as second class matter.

BULLETIN

OF THE

COLLEGE OF CHARLESTON MUSEUM

EDITED BY PAUL M. REA

CURATOR OF THE MUSEUM AND PROFESSOR OF BIOLOGY

Vol. 1 CHARLESTON, S. C.. OCTOBER 1905. No 3

PARASITES, MOSQUITOES AND DISEASE.

The lifetime of most animals, including man, is spent in a struggle for food and a constant warfare with enemies. Some animals, however, have a very lazy way of getting through life. Like some men, they depend upon the activities of others for their livelihood. The animals thus imposed upon are called hosts. The "hanger-on" or parasite obtains its food supply without labor on its own part, and, often living within the body of the host, secures protection from its natural enemies. The host usually suffers inconvenience, often bodily harm, and the lazy manner of living is not without cost to the parasite. Work, activity is as necessary for every minute part of the bodily mechanism as it is for the whole organism, be that organism lower animal or man. Degeneration follows close upon laziness. And so, when the parasite ceases to struggle for its food, when,

*Abstract of a public lecture delivered by Professor Rea in Manigault Hall, Monday evening, October 30.

like the tapeworm, it is constantly bathed in a pre-digested food supply, the digestive system of the parasite goes to pieces. When the constant watch and ward against ever-present enemies is relaxed, the nervous system follows suit. And so it happens to all the tissues of the body when they cease to do work.

But degeneration is not the only price which the parasite pays for its inactivity. Its life is entirely dependent upon the life of its host. If the host dies the parasite, too, must cease to exist, being unable, through degeneration, to support itself. The entire energy of the parasite then is devoted to the problem of perpetuating its kind. With what success this problem is solved many of the diseases of animals and men bear witness.

The solution of this one difficulty of the parasite's life often brings about a surprising complication in its life history. It is forced to resort to elaborate methods to secure for its descendants the same effortless existence at the expense of the chosen host.

Take, for instance, the liver-fluke, a parasitic worm, about an inch and a half in length, which lives within the liver of the sheep. Its numerous eggs are laid in the bile duct and are carried thence through the digestive system of the sheep to the grass. If, by chance, the eggs meet with water they develop into tiny swimming embryos. These embryos mature into a form quite unlike the parent liver-fluke, and, in their turn, give rise to another generation of embryos, which can develop only if they chance to meet with a water-snail. They penetrate the respiratory cavity and here within the protecting mantle, degenerate, lose all their organs and become mere egg-sacs.

From their eggs develop forms unlike any of those which bore their way into the liver of the snail. Here several generations of the same form may be produced until at the warm season of the year they give rise to new forms which leave the snail and swim about in the water. If the water dries

up these tiny organisms roll up in a ball with a thick coating and, much after the fashion of the seeds of plants, lie dormant upon the grass blades, never developing further unless by chance devoured by a sheep. Once back in the digestive system of the sheep, the tiny coated ball or cyst develops into the small worm with which this history started, and makes its home once more in the liver of the sheep. This singular life history presents the spectacle of three generations of varying forms, choosing different hosts, but all parasitic in the adult condition. And the whole purpose of this complicated process it must be remembered is simply to provide for getting the descendants of the liver-fluke into the liver of another sheep.

Many parasites solve their life problem by such an alternation of generations as has been described and of these the one which interests us tonight because of its near relation to ourselves in the genus *Plasmodium*.

Plasmodium is one of the smallest of animals, merely a single cell, and lives as a parasite in the red corpuscles of the blood of higher animals, chiefly in man and birds. The host suffers because the *Plasmodium* changes the very necessary substance of the red blood corpuscle, viz, the haemoglobin into granules of a supposably poisonous substance called malenin. Every 48 hours (72 hours in another species) a host of spores and melanin granules is set free in the blood; these spores infect new corpuscles and the process is repeated over and over again. The melanin granules are supposed to exert a poisonous influence upon the body causing chill, followed by fever and sweating—in brief—malaria.

The derivation of the word (*mala*, bad-*aria*, air) suggests the theory long held as to the cause of malaria. The night air of low, swampy regions has been held responsible. Drinking water, also, has been accused of being the means of introducing the malarial parasite into the system. But it remained for the microscopist to discover the real agent of infection.

If a drop of blood drawn from a malarial patient is exposed to the air for 10-30 minutes, some of the *Plasmodium* spores are observed to put out little whip-like processes which usually break off and swim about by themselves while other spores remain round and motionless. The former (microgametes) unite with the latter—(macrogametes.) This strange development of the *Plasmodium* spore was found to take place only when outside of the body of the patient, and it was therefore recognized as the beginning of an extra-corporeal stage of the existence of the parasite.

In what host was this period of its life history passed? Since the malarial parasite is entirely unable to leave the blood of its own accord the question became—what agent could remove it? Clearly some blood-sucking animal common in low-lying, damp regions, probably a suctorial insect, was the culprit. Suspicion at once pointed to the mosquito. Finally by the labor of Laveran, Major Ross in India, and Koch, Grassi and others elsewhere, the surmise was proved correct, and the complete life history of *Plasmodium* made out.

It was found that in the digestive tract of the genus *Anopheles*, the same development of the *Plasmodium* spore into conjugating micro—and macrogametes takes place as has been observed in the drop of blood drawn from the body of a malarial patient. The fertilized egg which is the result of this union bores through the stomach wall of the mosquito and out in the body cavity breaks up into a host of spores. These work their way forward into the salivary glands of the insect, and here lie ready to be transferred to the blood of the next victim of the mosquito. The entire process of development which the parasite undergoes while enjoying the mosquito as a host occupies seven or eight days.

That the malarial parasite is transmitted solely through the agency of mosquitoes has been strikingly demonstrated by ex-

periments carried on in the Campagna of Italy—for centuries reputed one of the worst malarial regions of the world. Two investigators lived here for weeks with the sole precaution of retiring before sunset to a mosquito-proof hut and remaining therein until after sunrise. The windows and doors remained open and the notorious night air was never excluded. The end of this experiment found the investigators in perfect health. In this way it was demonstrated that the worst malarial regions are robbed of their terrors by quarantine against mosquitoes. That the mosquito was not unjustly accused was proved by the placing of volunteers under perfect hygienic conditions and allowing them to be bitten by mosquitoes which seven days before had fed upon malarial blood. Malaria was invariably developed in these cases.

Of many genera of mosquitoes *Culex* and *Anopheles* are the most common. Now the malarial parasite may produce its micro- and macrogametes in the intestine of any blood-sucking insect, but it is only in mosquitoes of the genus *Anopheles* that further development takes place. Since *Anopheles* is a night-flier it is very natural that the malaria was attributed to the night air when it should have been the night mosquito. The bite of *Culex* never conveys malaria.

The importance of the relation between the mosquito and disease is further increased by the very recent discovery, since 1899, of the transmission of the much dreaded yellow fever by a mosquito, not *Anopheles* in this case, but *Stegomyia fasciata*. This mosquito is not a native of this country, but has been imported from the West Indies and Central America, and has readily established itself in all our Southern coast cities, even penetrating some considerable distance inland.

The relation of *Stegomyia fasciata* to yellow fever has been demonstrated by experiments carried on in Cuba under the direction of the United States army. A camp was established under perfect hygienic conditions and here non-immune volunteers were allowed to be bitten by mosquitoes which had previously fed upon the blood of yellow fever patients. As

a result of the experiments we know that a mosquito which has bitten a fever-stricken patient during the first three days of the disease is capable, after an incubation-period of from twelve to eighteen days, of transmitting yellow fever to every non-immune person it bites during the rest of its life. After about the third day of the disease the infective principle disappears from the blood and mosquitoes can no longer become contaminated.

Just as in the history of malarial fever, other theories have been current regarding the cause of yellow fever. Chief among these was the theory of transmission by fomites (*i. e.* articles or inanimate objects that have come in contact with yellow fever patients or their immediate surroundings). That the disease can *not* be conveyed by fomites and that mosquitoes are the only agents of infection has been abundantly proved by the army experiments in Cuba. A mosquito-proof hut was erected and filled with clothing, bedding, etc., soiled and contaminated by contact with yellow fever patients. Amid these unwholesome surroundings three non-immune young Americans slept for twenty nights and emerged in perfect health. In another building, thoroughly disinfected, a volunteer developed yellow fever from the bite of an infected mosquito, while other men in the same room but protected from mosquitoes remained in perfect health. The knowledge gained through these experiments proves that disinfection of freight and baggage from yellow fever regions is needless if care be taken to see that it contains no live mosquitoes.

On the analogy of malaria these facts suggest that there must be a microscopic or ultra-microscopic parasite of *Stegomyia fasciata* which, in order to complete its life cycle, must be transferred to the blood of a human being as intermediate host, and that this parasite is the cause of yellow fever. Up to the present time, however, such a parasite has not been isolated although we know the place and duration of both stages of its life history.

If mosquitoes could be exterminated malaria and yellow fever would vanish from the face of the earth. Though this is manifestly beyond the power of man, still the case is not hopeless for mosquitoes are not strong fliers and never travel far from their breeding places. When strong winds blow they seek shelter and so are seldom blown great distances. A moderate wind blowing steadily in one direction may distribute mosquitoes several miles. Trains carry them farther but since these modes of dispersal are unusual we may conclude that each locality breeds its own mosquitoes. Mosquitoes breed by thousands in still water, stagnant pools, swamps, marshes, mud puddles, gutters, cesspools, sewers, cisterns, rain-barrels, tin cans, in fact, wherever water stands for two or three weeks at a time. If these breeding places can be abolished the mosquitoes will go too. In many localities it is quite feasible to drain or fill in pools, swamps and marshes, and not only banish the mosquitoes but also improve the landscape incidentally. Cisterns and the like can easily be screened and the tin cans on dumps should be cared for in any case.

A brief examination of the life history of the mosquito will show that even when bodies of still water cannot be abolished mosquitoes may still be controlled. The female mosquito always resorts to water to lay her eggs, which float on the surface till the larvae, "wrigglers", hatch. These larvae breathe by a tube at the posterior end of the body and later metamorphose into pupae which breathe through the head. From the pupa the adult mosquito emerges fully formed into the air. Now fish feed voraciously on mosquitoes in all these stages and the introduction of fish into ponds will often exterminate the mosquitoes. Perhaps one of the most useful methods of distruction, however, is in covering the surface of still water with a thin film of patroleum. This kills the females as they come down to lay eggs and drowns the larvae and pupae by preventing their breathing tubes from reaching the air. Wherever systematic efforts of this

sort have been made a gratifying decrease in the number of mosquitoes and the amount of disease has resulted.

CHARLESTON NATURAL HISTORY SOCIETY

At a recent meeting of the Charleston Natural History Society, which was organized last spring under the auspices of the Museum, it was decided to devote the winter work to a study of the birds of Charleston and vicinity. The Museum will prepare special exhibits to aid in identifying birds and the BULLETIN will publish each month a list of all the birds that have been reported from actual observation. All persons who are interested in the study of birds or who would like to become acquainted with our local bird life are invited to join this society. Particulars regarding membership may be obtained from the president, Mr. H. R. Sass, or from the curator of the Museum.

The following list of October birds, compiled from notes and observations by Mr. H. R. Sass, is offered as a basis for future work:

Permanent residents. Black vulture, turkey buzzard, mockingbird, cardinal, common crow, Carolina wren, great blue heron, yellow hammer, downy woodpecker, yellow-bellied sapsucker?, blue jay, clapper rail, kingfisher?, bob-white, Carolina dove, brown thrasher.

Summer residents. Red-eyed vireo, white-eyed vireo, red start, chimney swift, Maryland yellow throat, hummingbird, little blue heron, night heron, night hawk, summer warbler, black throated blue warbler, Blackburnian warbler, yellow-billed cuckoo, ovenbird, nonpareil, catbird, wood pewee?, bank swallow, hermit thrush.

Winter residents. Loggerhead?, ricebird?, herring gull?, sharp-shinned hawk?, cooper's hawk?, sparrow hawk?, meadow-lark, red-bellied woodpecker?, crested tit, chickadee, towhee, myrtle warbler, killdeer plover, pied-billed grebe, purple grackle?.

We quote from Mr. Sass ; "The above mentioned species have actually been observed during the month of October, either in Charleston, on the Ashley River and Wappoo Cut, on James Island, or on the mainland north of Wappoo Cut, known as St. Andrew's Parish. This list is very incomplete. It should be taken as a list of the *commoner* October birds rather than of all the October birds. There are many waders undoubtedly present in this region during October which are not mentioned above. In addition there are many other forms which I am almost certain are here in October, though I am unable to verify my belief by means of my notes."

The Museum will welcome any addition to the list of October birds, and since it is desired to make the November list as complete as possible contributions from any observers will be gladly received.

EXHIBITS AT THE MUSEUM

*BIRDS: THE PHEASANT FAMILY, *Phasianidae*.

This family includes the pheasants, peacocks and turkeys, as well as the jungle fowl of India (*Gallus bankiva*) from which our domestic fowls are supposed to be descended. The pheasants and peacocks originated in Asia, but are now common throughout Southern Europe and England, and have been introduced into parts of this country. The Yucatan turkey and four races of the wild turkey are the only representatives of this family native in America. Our domestic turkey is derived from the wild turkey of Mexico, which was introduced into Europe in the 16th century, and from there was brought to Eastern North America. It differs from the native turkey only in having light tips on wings and tail.

The peacock, (*Pavo cristatus*) is a native of India and is

*This collection has been arranged by Mr. Fitzhugh Sally, who will continue to work on the birds of the Museum during the winter.

said to have been introduced into Greece by Alexander the Great. The birds are readily tamed, are extremely prolific, and are found in parks and on estates throughout this country, being highly prized for their beauty. The Romans esteemed them highly as a food, but at present only the young are eaten as the flesh of the old bird is hard and dry.

The Pheasants (*Phasianae*) are counted among the most beautiful birds in existence. They came from Asia and are said to have been introduced into Europe from Phasis, a river of Colchis, about the time of the Argonauts. They live in wooded places, build their nests on the ground and feed on insects and seeds. If disturbed by sportsmen they have a foolish habit of perching in a nearby tree and fixing their attention so intently upon the dogs that the hunters may easily approach and kill them. Pheasants are highly esteemed as a table luxury and would, therefore, soon be exterminated if they were not protected and bred by the owners of large estates. Because of their beauty they are kept in most of the parks of Europe and in this country the golden, silver, and ring-necked pheasants have been successfully introduced into Washington, Oregon and California, and have become naturalized in game preserves in the East.

The representatives of this family in the Museum include a fine group of English pheasants mounted amid their natural surroundings. The male is perched on a low stump, on the lookout for enemies. The female, protectively colored in soft, dull browns, is couched on her nest in the grass while near her run the flock of downy chicks seeking for food. This group, though mounted in Ireland 20 years ago, is one of the best effects in the Museum. It was purchased in April, 1905. Other specimens of the English pheasant show the variability of its coloring, some closely approaching the ring-necked pheasant, while another is spotted with white throughout. The collection also includes the golden, silver, Japanese, fire-back and the rare argus pheasants besides the peacock and our native wild turkey.

NOTES FROM THE MUSEUM

The Museum is open to the public on Saturdays from 10 to 5 and on other week-days from 10 to 12 and 1 to 5. Children unaccompanied by an adult are admitted only on Saturdays.

Manigault Hall, which has been closed for some months during the progress of alterations necessary to convert it into a lecture-room, is again open to the public, except at times when it is in use for lectures. The archaeological and ethnological collections have been rearranged about the walls, leaving the center of the hall free for an audience room. A platform with a lecturer's desk and long table for exhibition of specimens has been constructed and a movable blackboard placed behind it. On the opposite side of the room a powerful electric lantern has been installed for the projection of lantern slides and microscopic objects, including living forms.

The curator is pleased to announce at the beginning of the college year the opening of a library for the Museum and the Department of Biology. The remodelling of Manigault Hall for use as a lecture-room has made it possible to devote to this purpose a small room formerly used as a class-room. A large new bookcase affords accommodation for the many rare and valuable scientific books belonging to the College and Museum. These have hitherto been inaccessible, having been stored away in the over-crowded library building of the college. The new library renders available the complete sets of scientific publications of the government, and the curator has this year added a number of new books and journals.

During the past two years a card catalogue of this library has been in preparation and is now nearly completed. It contains also cards for the scientific books of the Charleston Library Society. It is the wish of the curator to make this catalogue a reference list of the scientific resources of

Charleston, and he will esteem it a great favor if the owners of private libraries having in their possession old or modern scientific books of value or interest will communicate with him to this end. The library is open to all properly qualified persons upon application to the curator.

The lecture on Parasites, Mosquitoes, and Disease was illustrated by lantern slides and at the close of the hour living mosquito larvae and pupae were projected upon the screen. The Museum expects to receive in a few days a collection of mounted mosquitoes of the United States which will be especially attractive to those who attended the lecture on October 30th.

Temporary electric lighting was provided for the approaches to Manigault Hall for the lecture on Monday evening, October 30th. In order that evening lectures may be given at the Museum during the fall and winter, this temporary installation will be retained until funds are available for a permanent equipment.

Three important departments of the Museum are undergoing revision and rearrangement this fall. Special attention will be devoted to the birds of Charleston and vicinity and the collections in Agassiz Hall are being arranged to assist the field study of our local birds which has been undertaken by the Charleston Natural History Society, as described on page 26 of the BULLETIN. In addition a systematic revision of the collection is in progress and will be reported from time to time in the BULLETIN.

The gallery of Holmes Hall is being prepared for the exhibition of the extensive osteological collection which is now scattered throughout the Museum and when all the skeletons have been put in order a series of special studies will be undertaken which will serve as a guide to the exhibit. The synoptic collection of invertebrates is being entirely revised and much material which is now in storage will be prepared for exhibition.

The Bulletin is published monthly from October to May by the College of Charleston and is devoted to descriptions of exhibits, reports of lectures, and notes from the Museum. Entered at the post office at Charleston, S. C., as second class matter.

BULLETIN

OF THE

COLLEGE OF CHARLESTON MUSEUM

EDITED BY PAUL M. REA

CURATOR OF THE MUSEUM AND PROFESSOR OF BIOLOGY

Vol. 1 CHARLESTON, S. C. NOVEMBER, 1905 No. 4

*SOME ORNITHOLOGICAL NOTES

CHARLESTON, S. C., *Nov. 10, 1905.*

TO THE EDITOR OF THE BULLETIN: Noting with great pleasure the appearance of the Museum BULLETIN, and enjoying its excellent "menu" of popular scientific information, it occurs to me that the following observations, selected from a large number accumulated in the course of weekly visits to the country, may be of interest to some of your readers.

September 20, 1905. While crossing the causeway connecting South Island with the mainland in Georgetown County, a bird rose from the fresh water portion of the marsh which at first glance I supposed to be a young specimen of the White Ibis (*Eudocimus albus*), indeed there was

*The BULLETIN takes pleasure in publishing these valuable contributions to the ornithology of South Carolina and takes advantage of this opportunity to express the hope that other readers will follow the example of Dr. Wilson and send us observations in any department of natural history.—EDITOR.

but one other bird that it could possibly be, and that one no one is ever looking for in South Carolina—the Roseate Spoonbill (*Ajaia rosea*). But the next moment a slight change of direction brought the head and bill into view and it *was* the Spoonbill—the bird that Dr. Bachman saw only three times in twenty years, and Audubon never saw at all. I have heard of but one other record, years ago at Beaufort, and have no assurance that the bird seen then was not a flamingo. In the present instance the identification was positive.

October 3, 1905. The Black Crowned Night Heron (*Nycticorax grisea naevia*, *Coues*,) is common enough and may be seen about the marshes almost any evening or early morning, usually on the wing or perched on some tree. The Yellow Crowned Night Heron (*Nycticorax violacea*), however, is a very much rarer bird, and more frequently heard than seen. On the date mentioned I walked down to a marshy creek near Bull's Bay, about five miles from Awendaw Bridge, to pick up any ornithological facts that might be "lying around loose," and was at once attracted by what looked like a large hawk perched on a dead limb some six hundred yards away. The limb, however, overhung the water too near the surface to be a likely resting place for any large hawk of my acquaintance, and on bringing my glasses to bear on it I saw at once that it was a heron, though evidently none with which I was familiar. Crossing the bridge I saw it fly down to the edge of the marsh and made a long stalk along the wooded margin only to flush a small Blue Heron from apparently the very spot. I knew that this was certainly not my bird, and pushed on a few yards further, when two herons, unknown to me, flapped up and away, but too much hidden by the bushes to be identified except by general contour and mode of flight. I followed, saw them standing on the mud far up the creek bed, and in five minutes more had two Yellow-Crowned Night Herons under my bird glasses not fifty yards distant and entirely unsuspecting of my presence. It was a

little after noon and the sun bright and warm, but the birds were fishing quietly and rather lazily in the little pools left by the tide. They would pick up an occasional fiddler as they walked slowly about, then pause for a moment and strike and swallow a small fish. This was done in a manner different from any other heron, and I have observed them all. The patient watching of the Green "Skowk", the fidgetty hurry of the Louisiana Heron, the dignified pose and lightning stroke of the Great Blue, the two Egrets, and the Small Blue Heron are all different. These birds paused without any show of excitement, but rigid as a pointer on a covey; the neck began to straighten almost imperceptibly, gradually advancing the short (for a heron), thick, and slightly curved beak with a deadly aim, for I never saw them miss, and the next instant they were swallowing their catch before you could well realize how they got it. The birds were in summer plumage of the first year, upper parts nearly solid violaceous gray, lower parts several shades lighter. After studying them for some ten minutes I showed myself and they took wing, alighting in some green trees at a distance.

November 3, 1905. At this same place I was watching a flock of Sanderlings and Ring Plovers, when they suddenly took flight, and looking up I saw a fine Goshawk (*Astur Atracapillus*) flying off in apparent disappointment. This bird was in the brown plumage of the young and was the first that I had seen in four years.

October 17, 1905. Had the good fortune to observe two Bald Eagles catching their own fish—a *very unusual sight*. From the steamer Thistle, on Winyah Bay, I had been watching the pair with a very fine glass which I always carry for this purpose. Schools of mullets were jumping in every direction. The eagles, which were "gray", i. e. in the plumage of the third year, suddenly changed their flight and came sailing with bowed wings towards the water, being near enough to the boat to make the glasses unnecessary. Instead of the arrow-like swoop with which they would have

attacked a duck, or the downward plunge into the water of the Fish Hawk, they gradually came down over the school with legs fully extended and claws wide open, wetting only the unfeathered tarsi, and rose without any apparent effort on the line of a very obtuse parabola, each carrying a glittering fish in his talons, with which they at once flew towards the shore.

Among other birds observed during September and October, besides the more common species, were the Duck Hawk, (*F. Peregrinus*), the "Gannet"—a bad misnomer, by the way—(*Tantalus Loculator*), and the Common tern.

ROBERT WILSON.

BIRD RECORD FORM

In view of the recent decision of the Charleston Natural History Society to undertake an ecological study of the birds of Charleston and vicinity the Curator has prepared a special form for recording observations in such a manner that they may be easily filed and conveniently accessible at the Museum. This form (*see opposite page*) is printed on cards 4x8 inches. One card is used for a month's record of each species and at the end of the month the cards are to be returned to the Museum and placed on file so that all can be consulted at any time. These cards are issued in sets sufficient for a month's observations and provided with strong covers, making packages the size of a notebook and conveniently carried in the pocket. Directions for using the cards are printed on the cover of each package. (*See page 36*).

The important feature of these cards is that from the data on the top line all the records of any species, or of any observer, or for any month or year can be easily brought together at any time without the necessity of tabulation. In the columns below space is provided for recording important data and additional observations may be written on the back of the card.

SCIENTIFIC NAME

MONTH

YEAR

[illegible]

BIRD RECORD FORM

WRITE ADDITIONAL NOTES ON THE BACK

DIRECTIONS

Keep a separate card for each species.

Put the full month's record for each species on one card.

WEATHER—Note the conditions of temperature, wind, and sky.

GENERAL LOCALITY—*e. g.* city street, city yard, over city, James Island, Magnolia Cemetery, Ashley River, etc.

MINUTE LOCALITY—*e. g.* fence, bushes, tree trunk, top of pine tree, grass, beach, water, telegraph wire, etc.

OCCURRENCE—*i. e.* whether solitary (*s*), in pairs (*p*), in small flocks (*sf*), or large flocks (*lf*), and at the end of the day add whether the species has been common (*c*) or rare (*r*).

SEX—*i. e.* male, female, or both.

MATING OR NESTING—Insert *m* if the birds show signs of mating, *n* if they show signs of nesting, *i. e.* building, laying, setting, or rearing young.

FEEDING—Check this column if birds are feeding and note the kind of food whenever possible.

NOTE—*i. e.* character of note or song.

HOW IDENTIFIED—*e. g.* by color, size, form, flight, note, etc. State this as definitely as possible.

NAME—Determine the scientific and common names by comparing this record carefully with the descriptions in some good handbook, such as those of Chapman, Coues, or Ridgeway. On the back of the card note the author, title, and page of all books which you consult.

AT THE END OF THE MONTH RETURN THESE CARDS PROMPTLY TO THE COLLEGE OF CHARLESTON MUSEUM AND OBTAIN A NEW SET.

NOTES FROM THE MUSEUM

The Museum is open to the public on Saturdays from 10 to 5, and on other week-days from 10 to 12 and 1 to 5. Children unaccompanied by an adult are admitted only on Saturdays.

The Museum announces a lecture by the curator on WHALES AND WHALING to be given in Manigault Hall, Monday, November 27th, at 8.30 P. M. Many visitors at the Museum will be interested in the history of the whales whose skeleton is mounted in Agassiz Hall, and in learning something of the life and habits of the different whales and porpoises and of the methods of capturing them. The lecture will be illustrated with lantern slides. Entrance to the Museum Monday evening may be had from St. Philip Street, or through the College campus.

The regular November meeting of the Charleston Natural History Society was held in Manigault Hall, Tuesday afternoon, November 14th. Officers were elected for the winter term and the regular meetings of the Society were appointed to be held on the first Tuesday in each month during the college year, at 4.30 P. M. Rev. Robert Wilson, D. D., was elected an honorary member of the Society. After a brief announcement by the Director of plans for the ecological study of birds the Society listened to an interesting talk by the president, Mr. H. R. Sass, describing twenty-five of the most common birds found in Charleston and vicinity during the winter months. The talk was illustrated with specimens from the Museum, and these have since been placed in a separate case in Agassiz Hall for convenient study.

Professor Rea was invited to deliver the address on the occasion of the planting of trees on the grounds of the new Dorchester school building at Summerville in observation of Arbor Day. He described the function of the parts of a tree, the influence of environment upon form and growth, and the uses of ornamental and timber trees.

The October and November numbers of the BULLETIN are sent as sample copies to teachers in the graded schools of Charleston. The BULLETIN contains reports of lectures, descriptions of exhibits, and announcements of changes in the Museum. It will be sent by mail to any address for twenty-five cents a year. To those subscribing now Nos. 1 and 2 of Vol. 1 will be sent without charge to make a complete file. All who are interested in the Museum should subscribe to the BULLETIN.

All who are interested in the study of birds are invited to join the Charleston Natural History Society, which is making a study of bird life in Charleston and vicinity. The Society was organized to co-operate with the Museum and is accorded special privileges. Members receive the BULLETIN free, are admitted to special lectures and conferences, and have access to the Museum library, the bird records, and specimens in the cases. Particulars regarding membership may be obtained from the president, Mr. H. R. Sass, or from the curator of the Museum.

The Museum particularly wishes to record observations of birds seen within the city limits. It is interesting in this connection to note that seventy-one species have been observed in one garden south of Tradd Street, in this city. This will be encouraging news to those who can seldom go into the country to make their studies of bird life.

The Bulletin is published monthly from October to May by the College of Charleston and is devoted to descriptions of exhibits, reports of lectures, and notes from the Museum. Entered at the post office at Charleston, S. C., as second class matter.

BULLETIN

OF THE

COLLEGE OF CHARLESTON MUSEUM

EDITED BY PAUL M. REA

CURATOR OF THE MUSEUM AND PROFESSOR OF BIOLOGY

Vol. 1 CHARLESTON, S. C. DECEMBER, 1905 No. 5

EXHIBITS AT THE MUSEUM

WHALES AND DOLPHINS, ORDER *Cetecea*

Special attention was attracted to these aquatic mammals by Professor Rea's lecture of November 27th on "Whales and Whaling" and the following account is intended as a guide to the Cetacea in the Museum.

In spite of their aquatic habits and fish-like form the Cetacea are mammals. They differ from fishes in breathing by lungs and not by gills, in being viviparous, and not oviparous, i. e., they produce their young alive instead of laying eggs, and in suckling the young with a pair of milk glands or mammae. The fish-like form is an adaptation to facilitate progress through a dense medium like water. It is produced largely by the fat or blubber which covers the body in a layer often two feet thick. The ancestors of the whales were probably covered with hair for although few of them now have more than a dozen hairs

on the whole body the embryos are much better supplied. The embryos also show signs of dermal plates which make it possible that these animals may once have been as completely armored as the armadillo is to-day. With the loss of both hair and dermal plates the blubber has been developed to keep the animal warm.

One of the many adaptations to aquatic life is the shortening of the fore limbs and their conversion into paddles, which assist in balancing the body, but are of little use in swimming. The hind limbs must have been entirely useless for they have completely disappeared except for the small bones of the pelvis deeply buried in the flesh. One old theory supposed that the great flukes of the tail, upon which the whale depends almost entirely in swimming, were the hind limbs migrated backwards. There was nothing inherently improbable in this supposition but it was conclusively overturned by the discovery that the flukes develop as lateral flanges on the tail of the embryo at a time when distinct rudiments of the hind limbs are present.

The horizontal position of the whale's flukes is strikingly at variance with the universal vertical tail fin of the fishes. The vertical fin is adapted for turning the body to one side or the other, while the horizontal flukes are more effective in vertical motions, and so are specially suited to the needs of the whale which must needs spend much of its time in coming up to the surface for air, something which the fish never has to do. The whales breathe through nostrils or blow-holes situated at the highest part of the head—far back in the case of the baleen whales, but at the very tip of the great square head of the sperm whale. On coming to the surface to breathe the whale first expels the vitiated air from its lungs, and this, being warm and moist, condenses in the colder air to form steam or spray. This is the "blowing" of the whale, and if it is begun just before the surface is reached a little salt water may be carried up also, but water from the mouth is never expelled through the nostrils, for no such

communication exists between the two passages as in ourselves.

Although all whales are carnivorous they are far from competing for the same food in all cases. The sperm whales feed largely on the giant squids and cuttle fishes, with which we have such slight acquaintance because they live at the bottom of the deeper parts of the ocean. To secure food of this sort the sperm whales are provided with long narrow jaws and strong teeth, but of the nature of the combat between these giants we can easily imagine more than we know. The beaks of the squids in the stomach of the whale are proof that the whale is often victorious; but may we not suppose that he must run some risk of being ignominiously drowned in the entwining arms of the squid?

Other whales are entirely lacking in teeth. Teeth would indeed be utterly useless on the microscopic molluscs upon which these whales chiefly feed, and in their place there hang down from the sides of the upper jaw long plates of baleen or "whalebone" which are frayed out into fine hairs on the inner edge. Plowing through the sea with mouth wide open many thousands of minute pelagic animals are gathered into this rapacious maw. The jaws then close, the baleen plates folding down inside the great lower lips, and a two-ton tongue rises and presses the water out through the meshes of the baleen, which act as a sieve to retain each minute particle of food. Not the least surprising feature of this whole apparatus is the small size of the oesophagus, which is not more than two inches in diameter, and so contrasts oddly with the cavernous mouth, although perfectly adapted to the food which it receives.

If we turn once more to the evidence of embryology we shall see that teeth are formed in the jaws of the embryos of baleen whales and then absorbed to make room for the whalebone, very convincing proof that these whales are the most extremely specialized of all the Cetacea. Indeed it would be hard to find any vertebrate animal which has un-

dergone such extensive changes in habits and structure.

In the effort to learn more of the ancestry of the whales we naturally turn to paleontology to supplement the embryological evidence. But in this we are doomed to disappointment, for the few fossil Cetaceans which are known fail to throw any light on the nature of the terrestrial ancestors of the group. In connection with the preservation of Cetacean remains it is of interest to note that the earbones of whales are remarkably dense and, together with the teeth of sharks and bits of meteoric iron, are abundant in the deeper parts of the ocean floor. The extreme slowness with which these deposits must accumulate is evident.

The order Cetacea was formerly divided into herbivorous and carnivorous groups. The former, including the Manatee, Dugong, and the recently exterminated Rhytina or Steller's Sea-cow, are now referred to a distinct order—Sirenia. The Cetacea, as now understood, are all carnivorous forms, and comprise three sub-orders—the Mystacoceti or whalebone whales, the Archæoceti, a group of extinct Cetaceans of the genus *Zeuglodon*, and the Odontoceti or toothed whales. The last sub-order includes the Sperm whale (*Physeter*) and the Dolphins (*Delphinidae*).

The following Cetacean exhibits are to be found in the Museum.

BLACK WHALE, NORDCAPER, OR BISCAY WHALE

BALEANA GLALICALIS Bonnaterre = B. CISARCTICA, Cope

This is the skeleton of a young male captured in Charleston Harbor January 8, 1880, and mounted by Dr. Gabriel E. Manigault, then Curator of the Museum.

The length of this animal in the flesh was 40 feet 4 inches. The skeleton measures 35 feet 7 inches. Fortunately the greater part of the baleen plates or "whalebone" is shown in its natural position in the jaws.

The Black whale was formerly abundant off the coast of South Carolina and in other parts of the Eastern and Western Atlantic in temperate latitudes. This species is distinct from the Arctic or Greenland Right whale (*B. mysticetus*) and is closely related to the Southern Right whale (*B. australis*).

BLACK WHALE, NORDCAPER, OR BISCAY WHALE

BALEANA GLACIALIS, Bonnaterre = *B. CISARCTICA*, Cope

Incomplete skeleton formerly mounted in the Museum but disarticulated to make room for the smaller but perfect specimen now in Aggasiz Hall. Note the shape of the lower jaws and the absence of teeth and compare with the jaws of the sperm whale.

LOWER JAWS OF SPERM WHALE

PHYSETER MACROCEPHALUS

Compare the shape of these jaws and the strong teeth with the lower jaws of the baleen whales. These jaws are from a Sperm whale captured off the South Carolina coast.

BLACK-FISH

GLOBIOCEPHELAS MELAS

Skeleton of a Black-fish from Cape Cod, Mass. This animal is taken in schools and yields a moderate amount of oil. The Dolphins (*Delphinidae*), of which the Black-fish is a typical member, include the smaller whales with numerous functional teeth in both jaws.

BIBLIOGRAPHY

1. BEDDARD, F. E. A book of whales. *Charleston Library Society*. A thoroughly scientific but readable account of the whales and dolphins.
2. BROWN, J. T. The whalemen, vessels, apparatus, and methods of the [whale] fishery. In *The fisheries and fishery industries of the United States. Sec. V. vol. II. Museum Library*.
3. BULLEN, F. T. The cruise of the Cachalot. Also Denizens of the deep. *Charleston Library Society*. A very interesting mixture of fact and fiction, observation and imagination. No statement in these books can be accepted without verification.
4. CLARK, A. H. History and present condition of the [whale] fishery. In *The fisheries and fishery industries of the United States. Sec. V. vol. II. Museum Library*. Contains a description of the capture in Charleston harbor of the Black whale whose skeleton is now in the Museum, reprinted from the Charleston News of January 8, 1880.
5. FLOWER AND LYDEKER. Mammals, recent and extinct. *Museum Library*. Contains an excellent article on Cetacea.
6. LUCAS, F. A. Whales and whaling on the coast of Newfoundland. *The Children's Museum News, Dec., 1904. Museum Library*. Dimensions of the Sulphur-bottom and accounts of its capture by modern steam whaling methods.
7. MANIGAULT, G. E. The Black whale captured in Charleston Harbor. *Proc. Elliott Soc. 1885. Museum Library*.
8. TRUE, F. W. The whalebone whales of the Western North Atlantic, etc. *Museum Library*. Contains many references to the Black whale in the Museum.

APROPOS OF THE ROSEATE SPOONBILL

The publication in the November BULLETIN of Dr. Robert Wilson's observation of the Roseate Spoonbill has brought to the attention of the Editor several very interesting accounts of the occurrence of this bird in Charleston and vicinity,

In June, 1879, a Roseate Spoonbill was killed in Lucas Mill Pond in Charleston. The skeleton was presented to the Museum by Dr. T. Grange Simons and mounted by Dr. G. E. Manigault. It may now be seen in Agassiz Hall. The plumage of the Roseate Spoonbill is shown by a mounted skin also in Agassiz Hall. This bird, however, was not killed in this vicinity.

Dr. Simons states that about the year 1840 a Roseate Spoonbill was killed in a pond near Charleston by his uncle, Mr. Charles M. Bentham. The feathers of this bird were preserved within his recollection.

Mr. Henry L. Barker writes from Oakley Depot, S. C., as follows :

"In the early sixties Elias A. Ball, then the owner of 'Dean Hall' plantation, noticed one day a curious looking bird feeding on the edge of the duck pond, and getting his rifle he chanced a very long shot in the hope of securing it, which fortunately he succeeding in doing, sending the ball through the neck. It proved to be a Roseate Spoonbill, identified by the plate and description in Audubon, and was by long odds the most beautiful bird I ever saw."

The following statement from Rev. John Kershaw, D. D., adds another record of this bird: "About thirty years ago while on a fishing trip near Morris Island my attention was attracted to a bird that flew up from the marsh near by which, as it went, uttered a succession of peculiar harsh cries. I thought at first it was one of those small white cranes that abound hereabouts, but I observed that its flight, the movement of its wings, was different and swifter, that its

cry was one I had never heard before, and that there was a rosy color about its throat and breast such as I had never before seen. I called the attention of a gentleman present (Gen. W. G. Desaussure) to the bird, and he told me it was a Roseate Spoonbill, a rare bird in this vicinity, he added, though in his youth it had been more abundant."

Any further record of the occurrence of the Roseate Spoonbill in South Carolina will be appreciated by the Editor.

NOTES FROM THE MUSEUM

The Museum is open to the public on Saturdays from 10 to 5, and on other week days from 10 to 12 and 1 to 5. Children unaccompanied by an adult are admitted only on Saturdays.

The attendance at the lecture on "Whales and Whaling" was 136 as compared with 105 at the lecture on "Parasites, Mosquitoes and Disease."

The BULLETIN will be sent by mail to any address for twenty-five cents a year. Complete sets of back numbers will be supplied on request to new subscribers.

The Museum announces the installation of a telephone, number 2060, in the office of the Curator.

The regular monthly meeting of the Charleston Natural History Society was held in Manigault Hall Tuesday, Dec. 5th, at 4.30 P. M. The feature of this meeting was a continuation of the talks on birds which were begun by Mr. Sars in November.

Chapman's Handbook of the birds Eastern North America has been recently added to the Museum library and will be found very convenient in studying the birds in the Museum. The Charleston Library Society has subscribed to the Auk, a very valuable quarterly journal of ornithology, and to Bird Lore, the official organ of the Audubon Society.

The Bulletin is published monthly from October to May by the College of Charleston and is devoted to descriptions of exhibits, reports of lectures, and notes from the Museum. Entered at the post office at Charleston, S. C., as second class matter.

BULLETIN

OF THE

COLLEGE OF CHARLESTON MUSEUM

EDITED BY PAUL M. REA

DIRECTOR OF THE MUSEUM AND PROFESSOR OF BIOLOGY

Vol. 2 CHARLESTON, S. C., JANUARY, 1906 No. 1

REPORT OF THE CURATOR OF THE MUSEUM FOR THE YEAR 1905

To the President of the College of Charleston:

SIR: I have the honor to submit the following report upon the work of the Museum for the year 1905.

APPROPRIATION

The past year has been marked by the resumption of active work at the Museum. In 1904 the annual appropriation of City Council for the Museum was entirely inadequate even to prevent deterioration of the collections. In my report for that year I discussed the grave danger of allowing the appropriation to fall at any time below the amount necessary to prevent such deterioration of collections which are the accumulation of more than half a century and in which the City has invested a large amount of money. I also pointed out

the opportunity of the Museum to become an important factor in public education if granted a more liberal appropriation, and gave a general outline of the functions and work of the modern museum. In response to my suggestion, City Council materially increased the Museum appropriation for the past year. The wisdom of continuing a liberal support of the Museum is abundantly shown by the results already achieved as discussed in the following paragraphs.

LECTURES

Public lectures are being provided by the Museum to explain the work it is doing, to describe exhibits, and to place before the public accurate information on important scientific subjects. The first of these lectures was given in April, on "Museums of Natural History and Their Work." This lecture was given at 5 o'clock in the afternoon and the attendance was 51. In October a lecture on "Parasites, Mosquitoes, and Disease" was given in the evening with an attendance of 105. The November lecture on "Whales and Whaling" was also given in the evening with an attendance of 133. These lectures were all delivered by the Curator and will be continued as frequently as his duties permit, but it is hoped to secure other lecturers also.

The Curator offered to give a series of special lectures for the teachers and pupils of the public schools, but was unable to secure the co-operation of the Board of Commissioners. This is to be regretted because of the success which has attended such work in other places, and especially in view of the fact that no form of nature study is taught in our public schools.

LECTURE HALL

The need for a lecture room in the Museum has been met by alterations in Manigault Hall. A platform with a lecturer's desk and a long table for exhibition of specimens has been constructed and a blackboard placed behind it.

Seating for 90 persons has been provided, but if present attendance at the lectures continues additional chairs will have to be purchased.

ARCHÆOLOGICAL COLLECTIONS

When the alterations in Manigault Hall were undertaken it was proposed to loan the archaeological and ethnological collections to the trustees of the Gibbes Memorial Art Building. It was discovered, however, that the larger specimens could not be received in the Art Building and the proposed loan was abandoned. These collections have since been rearranged so that they do not interfere with the use of Manigault Hall as a lecture room.

PROJECTION APPARATUS

A powerful electric lantern has been installed in Manigault Hall for the projection of lantern slides and microscopic objects, including living forms. This projection apparatus is of the latest and most perfect design and is used to great advantage in the Museum lectures.

An attachment for the projection of opaqued objects in natural colors can be obtained for use with this apparatus and would greatly extend the scope of the lectures. Since book illustrations and natural objects can be projected without the cost of preparing lantern slides, a considerable saving in operating expenses can be effected by obtaining this attachment at once.

The skylights in Manigault Hall have been provided with heavy screens, which admit of darkening the room for the use of the projection apparatus in the daytime.

ELECTRIC LIGHTING

Electric lighting was provided for Manigault Hall for convenience in the use of the projection apparatus. When it became evident that much better results could be obtained from evening lectures, funds were not available for lighting

the approaches to the hall, and temporary wiring was put in. The increased attendance at the lectures has shown the wisdom of this decision and permanent wiring should be installed at once.

LIBRARY

The Museum has co-operated with the department of Biology in establishing a department library. A suitable bookcase has been built in the office of the Curator and here have been gathered all the books in the College Library pertaining to this department, as well as books belonging to the Department of Biology, and a few which are the property of the Museum. A very valuable scientific library has thus been formed containing many rare and valuable works, which could not be obtained by a new library. It is highly essential to the work of the Museum that new books and journals should be added regularly, and provision made for the proper care of the library and for binding pamphlets and journals. It will be necessary to build another bookcase at once to shelve the books now at hand.

The card catalogue, begun by the Curator two years ago and continued through the kindness of Mrs. P. M. Rea, has now been placed in charge of Miss Frances Jervy of the College Library. This catalogue contains cards for the scientific books of the Charleston Library Society, as well as for the Museum Library, and the Curator is adding as rapidly as possible cards for valuable books in private libraries, which may be consulted by properly qualified persons, thus making a complete catalogue of the scientific library resources of Charleston.

The Curator takes this opportunity of acknowledging the cordial co-operation of the Charleston Library Society in adding non-technical books and journals upon the recommendation of the Museum.

PUBLICATIONS

As a means of bringing its work before the public, the Museum has undertaken the publication of the BULLETIN OF THE COLLEGE OF CHARLESTON MUSEUM, an eight to twelve page leaflet published monthly from October to May and devoted to descriptions of exhibits, reports of lectures, and notes from the Museum. The BULLETIN is entered at the post office at Charleston, S. C., as second-class matter and is sent to subscribers for twenty-five cents a year. It is also sent without charge to the faculty and trustees of the College, to members of City Council, to county superintendents of education, to about half the newspapers in this state, and in exchange to other museums, colleges, libraries, and scientific workers.

The BULLETIN is valuable not only as a means of keeping the local public informed of the work of the Museum, but also as a means of making the scientific activity of this city better known throughout the country. A further value of the BULLETIN is as an historical record of the work of the Museum.

Several opportunities are likely to present themselves to the Museum of publishing scientific papers which would reflect credit on both the Museum and the city, but which are too extensive to come within the scope of the BULLETIN. I would suggest the desirability of providing for the publication, at irregular intervals, of the results of scientific work done under the auspices of the Museum. Such publications might form a series, entitled "Contributions from the College of Charleston Museum." In my discussion of the Elliott Herbarium (*infra*) I show how the Museum suffers for lack of such facilities for publication.

CHARLESTON NATURAL HISTORY SOCIETY

As a part of the educational work of the Museum and as a means of enlisting the interest and assistance of volunteer

workers, the Charleston Natural History Society was organized last spring under the auspices of the Museum. This society takes up definite lines of popular scientific study, in which it receives all the aid which the Museum can render. Membership in the society is open to all who are interested in the work which is carried on, at any time and when occasion offers it is intended to divide the society into sections, each devoted to the study of a separate topic. The Museum extends to the society the facilities of its library and frequently prepares special exhibits in co-operation with the Society.

BIRD COLLECTIONS

The bird collections are badly in need of rearrangement and relabelling and this work has been undertaken by a student under the direction of the Curator. The identification of specimens will be verified and permanent record made of all the work done. The specimens will be arranged in the most attractive manner for exhibition and for this purpose it is necessary to provide glass and fittings for two additional cases for which funds are not now available. Funds are also needed for relabelling this collection in order to make it accurate and attractive to visitors.

In connection with the purchase of a very fine group of English Pheasants, a special exhibit was prepared containing examples of nearly all the species of this family. This exhibit was temporarily placed in the tower cases at the entrance to the Museum, but should now be transferred and permanently installed in Agassiz Hall.

The Charleston Natural History Society is engaged in an ecological study of the birds of Charleston and vicinity. Its meetings have included lectures on the birds of each month, illustrated by specimens from the Museum, which have subsequently been placed in a special case for study during the month.

The Museum has also prepared special cards for recording bird observations and when these have been used by the members of the Society they are placed on file in the Museum, constituting valuable records of occurrence and habits. Provision should be made for printing more of these cards and for a cabinet in which to file them.

GEOLOGICAL COLLECTIONS,

Like nearly all the departments of the Museum, the geological collections are in grave danger of irreparable confusion if not immediately revised and properly accessioned. The Curator has been so fortunate as to enlist the interest and co-operation of Professor David S. Martin of Brooklyn, N. Y., who has generously offered to work over this collection without remuneration save a nominal sum for expenses.

EXCHANGES

The Museum is not as well supplied as it should be with duplicate specimens for exchange. A proposition has, however, been received from the South Carolina College to exchange some of their duplicate rocks for our duplicate birds. As a preliminary step the Curator is preparing a list of the duplicate birds and it is to be hoped that a mutually advantageous exchange can be arranged.

OSTEOLOGICAL COLLECTIONS

The admirable collection of skeletons prepared by the late Dr. G. E. Manigault, now scattered throughout the Museum, is being prepared for removal to the gallery of Holmes Hall, where it will be exhibited to much greater advantage and leave available much valuable space on the main floor. It is proposed to call this the Manigault Osteological Collection.

INVERTEBRATE FOSSILS

The records concerning the invertebrate fossils in the Museum are very incomplete and many specimens which are

now in storage should be placed on exhibition. It is important that these collections be worked over by a specialist before they suffer further confusion.

SYNOPTIC COLLECTION OF INVERTEBRATES

Material for a representative collection of invertebrates is now in storage at the Museum and can be prepared for exhibition with only slight expense. Work is now being carried on to this end.

ELLIOTT HERBARIUM

The Museum owns no single collection of higher scientific value than the Stephen Elliott Herbarium, yet this collection, after being rescued by strangers from the rubbish heap in the basement of the College Library, was again rescued from mice in the gallery of Agassiz Hall. In 1904 the Curator arranged with Dr. Beadle of the Biltmore Herbarium to have this collection put in thorough order without cost to the Museum and a printed report on its condition made. The work has now been completed and the manuscript of the report is being prepared for the press and will be published by the Biltmore Herbarium. It would have reflected credit upon the Museum to publish this report, and it is a source of chagrin to the Curator that a work so eminently the duty of the Museum must needs have been given to strangers.

The Elliott Herbarium is now stored in the vaults at Biltmore, and I am unwilling to consent to its return to the Museum until a suitable fire-proof and insect-proof safe has been prepared to receive it. I therefore strongly urge that special provision be made for this purpose without delay.

ACCESSIONING AND LABELLING

The specimens in the Museum are in perpetual danger of irremediable damage and confusion so long as proper accession records are not kept. The work of specialists in any department can be made permanently effective only by

proper accession records and whatever else is done in the coming year should be placed second in importance to the proper accessioning of specimens.

Both the appearance and the value of exhibits depend on accurate and attractive labeling of specimens. The present labels are either temporary or are so old that they should be replaced. The Curator has compared samples of the stock used by the best museums for labels but has no funds for printing. Some beginning of this important work should be made at once.

AQUARIA

The introduction of aquaria with running water would be an important addition to the attractions of the Museum and can be accomplished without great expense.

ATTENDANCE

Through the courtesy of Mr. Passailaigue, of the Consolidated Company, a turnstile has been loaned to the Museum for the months of the College session, and by this means a record has been obtained of the number of visitors in the Museum. The effect upon public interest of the increased activity of the Museum during the fall months is shown by an increase in the number of visitors from 983 during two months in the spring to 2,054 during two months in the fall.

DIRECTOR OF THE MUSEUM

With the addition of the duties of the Curator of the Museum to those of the Professor of Biology and with the effort to do justice to all departments of the Museum the Curator has necessarily become more and more an administrative officer, and in view of this fact and of the proposed additions to the staff of the Museum (*infra*) I have recommended that the title of the Curator of the Museum be changed to Director of the Museum.*

* This change was made by the Trustees January 8th., 1906

HONORARY CURATORS

As a means of associating scientific men of Charleston with the Museum and of securing advice on technical questions, I have recommended to the Trustees the appointment of Honorary Curators to act as advisers to the Director in the departments which they serve.* By this plan it is expected that the interests of each department will be promoted, as well as a more substantial growth of the Museum as a whole.

REPORTS

Hereafter the Director will make a formal report upon the work of the Museum during the calendar year, and this report will be published in the January issue of the BULLETIN.

The financial accounts will be made up at the close of the College year and transmitted to the Trustees together with nominations of Honorary Curators and other matters requiring action by that board.

Respectfully submitted,

P. M. REA, Curator.

NOTES FROM THE MUSEUM

The special cards for recording bird records have been received at the Museum and are ready for distribution to observers. The Director regrets the long delay in obtaining these cards and hopes that the January records will be especially accurate and complete. Directions for using the cards were given on page 36 of the BULLETIN for November, 1905.

Vol. I of the BULLETIN was concluded with the December issue in order that the volumes might coincide with the calendar year. Hereafter each volume will include eight numbers.

*The appointment of Honorary Curators was authorized by the Trustees January 8th., 1906.

The Bulletin is published monthly from October to May by the College of Charleston and is devoted to descriptions of exhibits, reports of lectures, and notes from the Museum. Entered at the post office at Charleston, S. C., as second class matter.

BULLETIN

OF THE

COLLEGE OF CHARLESTON MUSEUM

EDITED BY PAUL M. REA

DIRECTOR OF THE MUSEUM AND PROFESSOR OF BIOLOGY

Vol. 2 CHARLESTON, S. C., FEBRUARY, 1906 No. 2

EXHIBITS AT THE MUSEUM

MANIGAULT OSTEOLOGICAL COLLECTION

THE GIRAFFE, *Giraffa camelopardalis*, L.

The recent installation of the skeleton of the giraffe in Holmes Hall, as a part of the Manigault Osteological collection, invites the attention of visitors at the Museum to a survey of the present fund of knowledge concerning the structure, life and habits of this strange animal.

Once found in abundance over wide regions of the Eastern World, as Pliocene deposits of fossil species over Greece, Persia, India and China testify, the giraffe is now confined to the Ethiopian region alone.

Until the year 1902 it was considered to be the sole living representative of its family, whose place is intermediate between the deer and ox families of the ruminant group of Ungulates, or hoofed animals. In 1901 Sir Harry Johnston

and Mr. Eriksson discovered and brought out from the depths of the Kongo forest the skin of a hitherto unknown animal, cloven-hoofed and striped like a zebra on limbs and hind-quarters. This animal, called the "okapi" by the natives of the Kongo forest, was found to possess characters more nearly resembling the giraffe than any other living animal, and Professor Ray Lankester has therefore constituted it a separate genus, "*Ocapia*", in the family to which the giraffe belongs.

These two strange survivals of a prehistoric race differ from their nearest living relatives in having neither true horns nor antlers. The giraffe possesses, however, a pair of short, erect, permanent bony processes attached, as may be seen in the skeleton, partly to the frontal and partly to the parietal bones, not to the former only, as in the true horned ruminants. These "horns" in miniature are completely covered by the skin of the forehead and are surmounted by a tuft of strong, bristly hairs. In front of them is a median protuberance of the bone in the form of a rounded knob, increasing with age, especially in the male, to a size sufficiently prominent to be spoken of as the *third horn*.

In height, the giraffe exceeds all existing mammals. Our skeleton, that of a female, measures 12 feet, but the males often reach a height of 16 or even 18 feet. This exceptional elevation is chiefly due to the immense length of neck and the disproportionate height of the fore-quarters. The extreme elongation of the neck is brought about by the lengthening out of the seven cervical vertebrae. Thus the motion of the neck is rendered ridiculously stiff and awkward—"swaying like masts upon a moving sea", as they are described by Schillings, the German field naturalist and hunter.

The feet terminate in a small, daintily formed, divided hoof, but the accessory toes found in other ruminants are entirely wanting. The head is small and the eyes are large and lustrous, giving to the animal a peculiarly gentle ap-

pearance. The tongue is remarkable for its great length and power of muscular contraction. The lips are also long and flexible, and thus the giraffe, like the elephant, is supplied with an admirable organ for the examination and prehension of its food.

Giraffes are so strikingly colored—large blotches of a darker or lighter chestnut brown on a paler ground—that one would expect to find them conspicuous figures in their own haunts. Schillings, however, remarks that the giraffes and also zebras and leopards, likewise strikingly marked, really find a special protection in their coloring. "It harmonises so perfectly with their surroundings that they are blended in the back ground, so to speak, and can easily be overlooked."

Giraffes dwell chiefly on the plains, though at certain seasons of the year, usually at the beginning of a dry period, they may take refuge in the mountain woods. They are gregarious and are usually found in small herds of twenty or so individuals. They are most abundant in these days, since their destruction in South Africa, on the plains of German East Africa, where they find all the conditions in life necessary to them.

Their food consists chiefly of the foliage of the several species of acacia trees, which are abundant in this district, and for browsing on which, their long, free lips and prehensile tongue are especially adapted. It is only in captivity, when a sufficient supply of their natural food is not at hand, that they become reduced to the necessity of such provender as grass, hay and clover. The long neck is manifestly unsuited to browsing from the ground, though the awkward feat can be accomplished by dint of much straddling. Water is not an essential accompaniment to the food, for the giraffe can do without it for days at a time. During the rainy season the moist leaves afford a sufficient supply.

Increasing evidence seems to show that the giraffe is very truly a dumb animal. The low, bleating sound occasionally

heard from these animals when observed in zoological gardens seems to be a peculiarity of the imprisoned animal or else is produced only by the young ones.

The giraffe is a timid, harmless beast; in captivity, mild and docile. It is open to the attack of few enemies by virtue of its long, strong legs which may deal fearful blows. Lions and men alone are to be feared. Even lions rarely make their attack singly but in herds or in pairs.

The white "big game" hunter and the black soldier are the foes of the giraffe most to be dreaded. In South Africa, where hunting on horse-back is possible, the giraffes have for long years been things of the past. It is said that in some districts the black soldiers were actually permitted to use these animals for target practice. The hides of the beast have been much in demand for the manufacture of the long whips used in driving oxen, and, since the extinction of these remarkable mammals in South Africa, they have been hunted in German East Africa to satisfy the demands of the export trade. Undoubtedly, the race faces a speedy annihilation, and the story of the bison in North America will have its duplicate on the plains of Africa, unless the check is swiftly and surely applied.

The bones of the Museum specimen were obtained in 1876 and mounted by Dr. Gabriel E. Manigault.

BIBLIOGRAPHY—

Books available for further information concerning the giraffe are: text-books of zoology, especially Flower and Lydekker's "Mammals" and Sedgwick's "Students' Text-Book of Zoology," natural histories, encyclopedias and a book of recent date and unusual interest, "Flashlights in the Jungle" by C. G. Schillings, translated from the German by Frederic Whyte.

THE MOA, *Dinornis maximus*

A skeleton, whose story has the fascination pertaining to the mystery and might of those huge animals which flourished

upon this earth before the period of man's history began, is that of the Moa, an extinct feathered giant of New Zealand. This splendid skeleton, rarely included in the collections of the smaller museums of our country, has been recently removed from a dark and obscure corner of Agassiz Hall. From its present position on the floor of Holmes Hall it will command all the interest commonly attached to a new specimen.

The height of this huge, wingless bird is exactly nine feet. The giraffe, tallest of mammals, beside which it now stands, exceeds it by three feet only, while the largest ostrich of to-day measures but eight feet. Thus the Moa can well claim the distinction of having been the tallest of all known birds and certainly deserves its scientific appellation *Dinornis maximus*, the "terrible bird." Curiously enough, the head of the Moa is very tiny and appears ridiculously small and out of proportion, topping this huge mass of bones.

The Moa was a flightless bird, this species, as a glance at the skeleton will show, being absolutely devoid of even the vestiges of wings. Nature made up to it, however, in the matter of legs. These are so massively built that the limbs of the great giraffe, close by, look as slim and fragile as those of the daintiest gazelle in comparison. The use of these mighty members is problematical. Very likely they were of service in scratching up the roots of ferns on which the Moas are believed to have fed. Perhaps they served also to keep dangerous enemies at a respectful distance. "If a blow from an irate ostrich is sufficient to fell a man," says Mr. F. A. Lucas in *Animals of the Past*, "what must have been the kicking power of an able-bodied Moa?"

The length of the leg-bones given for an ordinary *Dinornis maximus* are as follows: Femur, 18 inches; tibia, 32 inches; tarsus, 19 inches; a total of 5 feet 9 inches. The tibia of the Museum specimen measures somewhat more: viz., 34 inches. The tibia of an ostrich, the largest living bird upon the earth to-day, is but 19 inches in length, while that of a

Moa in the collection of the Canterbury Museum, Christ Church, New Zealand, measures 39 inches. This is the largest bird-bone known.

The Moas were among the last of the feathered giants of old to vanish from the earth. Some memory of the living birds still lingers amid the haze of tradition. Early in 1833, Bishop Colenso heard from the natives of Waiapu, New Zealand, tales of a monstrous bird called Moa, that inhabited the mountain sides 80 miles away. Upon the approach of man, two huge lizards, on guard, wakened the giant bird, which then rushed forth and trampled the intruder to death. Similar traditions in regard to the Moa were met with in other districts. As time wore on, however, and no man was ever found who had actually seen this notorious bird, its existence, even during the past ten centuries, became a mooted question.

From the remains of this mighty race, scattered broadcast over the island, we have learned something of the size and structure of the departed birds, something even in regard to their color, for in an exceptionally dry cave on the South Island, bones were found, still united by ligaments and bearing patches of skin with feathers of a chestnut color tipped with white.

What agent caused the destruction of this race of giant birds? One theory supposes it to be the result of a glacial period. Another suggests their extermination at the hand of man, seeking for flesh food. Multitudes of charred bones interspersed with fragments of egg-shell indicate former barbaric feasts, and it may be that cannibalism was the result of this craving for flesh, when the Moa no longer remained to afford a less horrible satisfaction!

BIBLIOGRAPHY :—

An interesting and popular account of the Moas as well of other extinct feathered giants, may be found in F. A. LUCAS' "Animals of the Past," *Charleston Library Society*. Mr. Lucas recommends an article on Moa in Newton's "Diction-

ary of Birds," also articles in the "New Zealand Journal of Science" and the "Transactions of the New Zealand Institute." These books are not yet available in Charleston.

NOTES FROM THE MUSEUM

The Museum is open to the public on Saturdays from 10 to 5, and on other week days from 10 to 12 and 1 to 5. Children unaccompanied by an adult are admitted only on Saturdays.

The BULLETIN will be sent by mail to any address for twenty-five cents a year. Back numbers of Vol. 2 will be supplied on request to new subscribers. A few copies of Vol. 1 (five numbers) can be had at twenty-five cents each.

The skeleton of the Giraffe and the Moa, which are described in this issue of the BULLETIN, are a part of the Manigault Osteological Collection, comprising about 178 skeletons collected by the late Dr. G. E. Manigault and nearly all mounted by him. These have hitherto been scattered through the whole Museum without orderly arrangement, but have recently been transferred to Holmes Hall and arranged in natural order. When all the cases have been glazed the gallery containing this collection will be opened to the public, though some months will be required to complete the preparation of descriptive labels. Work on this collection will be reported from time to time in the BULLETIN.

The regular monthly meeting of the Charleston Natural History Society was held in Manigault Hall, Tuesday, Feb. 13, at 4.30 P. M. After a talk by the President, Mr. H. R. Sass, on "Early Spring Arrivals", the bird records for January, made out on the special cards recently devised and furnished by the Museum, were discussed by the Society and presented to the Director for filing. The next meeting of the Society will be held in Manigault Hall, Tuesday,

March 6, at 4.30 P. M., and all readers of the BULLETIN who are interested in our native birds are invited to be present.

A large case on the north side of Agassiz Hall is temporarily devoted to an exhibit of birds common in the coast region of South Carolina at this season. This exhibit is intended as an aid in the work of the Natural History Society and will be revised from time to time with the departure of winter visitants and the arrival of spring visitants and summer residents. This exhibit will be necessarily incomplete until the Museum has more accurate migration records.

An important addition to the Museum library is Coues' "Synopsis of the Birds of South Carolina" (1868), the last list based on actual field work.

A recent addition to the shelves of the Charleston Library Society, is a book which will delight young and old alike, the student of science as well as the non-scientific lover of stories of adventure and hunting—"Flashlights in the Jungle", by C. G. Schillings, translated from the German by Frederic Whyte. This book is a record of hunting adventures and of studies in wild life made by a great field-naturalist, "a trained scientific observer as well as a mighty hunter." The unusual feature of this book of thrilling tales is the illustration afforded by 302 of the author's "untouched" photographs, taken by day and night in the jungle and on the plains. Photographs of wild animals, taken in complete freedom, are necessarily rare, and besides compelling intense interest, constitute biological documents of the highest importance.

Monday evening, January 29th, Professor Rea lectured in Manigault Hall on "The Geological History of the Great Lakes."

The Museum announces a public lecture on "Typhoid Fever" to be given by Professor Rea in Manigault Hall Monday evening, February 26th, at 8.30 P. M.

The Bulletin is published monthly from October to May by the College of Charleston and is devoted to descriptions of exhibits, reports of lectures, and notes from the Museum. Entered at the post office at Charleston, S. C., as second class matter.

BULLETIN

OF THE

COLLEGE OF CHARLESTON MUSEUM

EDITED BY PAUL M. REA

DIRECTOR OF THE MUSEUM AND PROFESSOR OF BIOLOGY

Vol. 2 CHARLESTON, S. C., MARCH, 1906 No. 3

EXHIBITS AT THE MUSEUM

BIRDS OF THE COAST REGION OF SOUTH CAROLINA

An exhibit of the birds of the coast region of South Carolina has been temporarily installed on the north side of Agassiz Hall to aid in the work of bird students. The birds are grouped for the present season in four sections, viz., permanent residents, winter visitants, spring migrants and summer residents. For the convenience of the members of the Natural History Society and others interested in our local bird-life, the following explanation will serve as a guide to the exhibit.

PERMANENT RESIDENTS—birds occurring in this locality throughout the year—are found at the extreme left of the case and are divided into two sections.

Section I comprises the birds as yet unreported this year by members of the Natural History Society.

Section II comprises the birds which have been reported this year by members of the Society.

WINTER VISITANTS—birds which come from the north in the fall, pass the winter with us, and leave again in the spring—are to be found in the central portion of the case. This group is also divided into the sections of reported and unreported birds as described above. The large number of water-fowl is a striking feature of this portion of the exhibit. Since many of these winter visitors take their leave during the present and the coming month, individual birds will be removed from the exhibit as soon as their departure is recorded.

SPRING MIGRANTS comprise those birds which pass through this region on their way to their summer homes in the north. The present month witnesses the real beginning of this migration. As the time approaches for the arrival of these transient visitors they will be placed on exhibition that their appearance may become familiar to the observer, and when actually reported by a member of the Society they will be transferred to a "reported" section of migrants. A bulletin of "Spring Arrivals" is posted near the exhibition case, and upon this will be found the name of the first three observers of each new-comer, together with the date of observed arrival.

SUMMER RESIDENTS are those birds which come from the south in the spring, remain to rear their young in this region and depart again in the fall. This group will be found at the extreme right of the case, and its treatment will be similar to that of the MIGRANTS as described above.

The exhibit described above is arranged on the basis of the "Synopsis of the Birds of South Carolina" published by Elliot Coues in 1868. This is the first and only complete list of the birds of this State having as its basis *original field work*.* Since its publication 38 years have elapsed, and it is

*L. M. Loomis, "An Historical Sketch of South Carolinian Ornithology. ('91.)

therefore much in need of revision. The Museum, through the medium of the Natural History Society, is glad to accumulate data looking toward the publication of a new synopsis, and will welcome contributions of bird notes from observers throughout the low country.

Two other lists of the birds of South Carolina have been published, but are chiefly compilations. The first was made by Prof. Lewis R. Gibbes, professor in the College of Charleston, and will be found in the appendix of Tuomey's "Report on the Geology of South Carolina" issued in 1848. The second list was made by Frederick W. True, Curator in the U. S. National Museum, and appeared in a volume of the "Resources, Population, Institutions and Industries of South Carolina," published by the State Board of Agriculture in 1883.

The chief and almost the sole figure in contemporaneous South Carolinian ornithology is Mr. Arthur T. Wayne of Mt. Pleasant, S. C. Mr. Wayne is an ornithologist of recognized authority, and his forthcoming book on the birds of the coast region of South Carolina is awaited with much interest.

The following birds have been reported by members of the Natural History Society for the months of January and February, 1906. The list is classified according to Coues' "Synopsis of the Birds of South Carolina (1868), recent corrections and data being indicated by footnotes.

PERMANENT RESIDENTS—Brown thrasher, American robin¹, mocking bird, catbird², bluebird, tufted titmouse, Carolina chickadee, white-breasted nuthatch, brown-headed nuthatch, brown creeper¹, Carolina wren, long-billed marsh wren¹, pine warbler, cedar bird, loggerhead shrike, song sparrow¹, English sparrow, field sparrow³, chipping sparrow⁴, American goldfinch¹, cardinal, towhee, red-winged black-

¹ *Winter visitant*, (A. T. Wayne) ² *Breeds rarely*, (A.T.W.)

³ *Breeds very locally near coast.* ⁴ *Breeds rarely*, (A.T.W.)

bird, meadow lark, boat-tailed grackle, crow, fish crow, blue-jay, phoebe¹, kingfisher, flicker, yellow-bellied sapsucker, downy woodpecker, southern hairy woodpecker, red-bellied woodpecker, barred owl, marsh hawk¹, sparrow hawk, sharp shinned hawk¹, Cooper's hawk, fish-hawk², black vulture, turkey buzzard, Carolina dove, wild turkey, bob-white, Wilson's plover², killdeer plover¹, clapper rail, bald eagle, great blue heron.

WINTER VISITANTS—Hermit thrush, ruby-crowned kinglet, myrtle warbler, white-throated sparrow, junco, vesper sparrow, titlark, red-tailed hawk, lesser scaup duck, mallard duck, hooded merganser³, ruddy duck, pintail duck, golden-eye duck, red-throated diver⁴, herring gull, ring-billed gull, pied-billed grebe³, American coot.

SUMMER RESIDENTS—Purple martin, yellow-throated warbler.

LECTURES AT THE MUSEUM

TYPHOID FEVER

On Monday evening, February 26th, a public lecture on "Typhoid Fever" was given in Manigault Hall by Professor Rea. The subject was approached from the point of view of the life history of the bacteria which are the cause of the disease.

Since 1880, typhoid fever has been known to be produced by a specific organism—the *bacillus typhosus*—which infects the system through the digestive tract. The bacilli work their way through the lining wall of the intestine and gather in the lymph spaces where they are attacked by a defending host of so-called "phagocytes" and often destroyed in large numbers. These phagocytes are

¹ Winter visitant, (A.T.W.) ² Summer resident, (A.T.W.)

³ Permanent resident, (A.T.W.) ⁴ Very rare, (A.T.W.)

for the most part white blood cells, whose work it is to defend the body from the attacks of disease-producing bacteria and similar dangerous invaders. These cells have a chemical affinity for the bacteria and eat them up by merely flowing around them and then digesting them.

Frequently, however, the bacteria prove too much for the phagocytes and are themselves the victors in the struggle. In such cases there is serious congestion of the lymph cavities and consequently nutrition is cut off from certain portions of the intestinal wall. The cells of these portions, therefore, die and are sloughed off, leaving ulcers or open sores. From these ulcers bleeding occurs in proportion to the size of the injured blood vessels which may lie in the affected region and these hemorrhages constitute a serious feature of the disease.

The ulcers vary in depth, some being very shallow and of little importance, while others may extend through the whole muscular coat of the intestine and be separated from the body cavity only by the thin peritoneal membrane. These deep ulcers are the cause of a large proportion of the fatalities resulting from the disease, for perforation of the peritoneal membrane means a general infection of the body cavity from the contents of the intestine and an immediate and very serious surgical operation is then the only recourse. Until these ulcers are thoroughly healed solid food or muscular exertion of the slightest nature is likely to cause perforation.

The intestinal ulcers and the resulting hemorrhages, however, do not constitute the only serious feature of the disease, for the bacilli are carried by the blood and lymph to all parts of the body, resulting in a general systemic infection. The bacilli themselves do no direct injury to the body but, being living organisms, they produce waste products, and these are decidedly poisonous to the body tissues and are known as "toxins." The toxins are formed in large

quantities throughout the system and are the direct cause of the "fever."

Fortunately the system has a means of defence against these toxins. In a short time after the beginning of the fever there is developed in the blood a substance called "anti-toxin" which was not previously present and which has the property, not only of neutralizing the toxin, but of actually clumping together and destroying the bacilli themselves. When the antitoxin becomes fully effective the fever disappears and convalescence begins. It is important to remember, however, that at this time the intestinal ulcers are just beginning to heal and a serious relapse may still occur if solid food or bodily exertion are prematurely indulged in. The anti-toxin may remain in the blood for years and confer a certain amount of immunity from another attack.

From the above account of the nature of the disease it is plain that the body of a typhoid patient is filled with hordes of typhoid bacilli. These dangerous germs escape from the body in large numbers in its excretions, especially in the saliva, the faeces and urine. For months after convalescence the germs live on and are excreted with the faeces and for more than a year they escape with the urine. Since new cases of typhoid fever arise only when some of these bacilli are introduced into the mouth of another person, it will be readily seen that a typhoid patient is a walking menace to the community for a year after his recovery.

Not only then must extreme care be taken by physician and nurse to thoroughly disinfect the excreta, but also hands, clothing, utensils, and, in fact, everything that comes in contact with the typhoid fever patient. Excreta also from the body of the convalescent should be regarded as a source of danger and should be disposed of with great care.

Typhoid bacilli, having left the body of a patient, live for many months in damp soil, sewage, or water and multiply rapidly in milk. They withstand freezing and may, there-

fore, be carried in ice under certain favorable conditions. They are not killed by dessication and may, therefore, be blown about in dust. A few hours exposure to strong sunlight, however, or boiling proves fatal to them.

The infection of the water-supply is, perhaps, the most serious source of danger. Cisterns may become polluted by leakage from privies or sewers through cracks in the walls or by filtration through porous walls which filter out the odor and appearance of sewage but still transmit the bacilli. It is obvious then that in cities like our own universal sewer connections should be required and a pure water supply made available in order that all cisterns may be abolished.

Danger of contracting typhoid fever then usually comes from improper regard for the following conditions: Drinking infected water; eating uncooked vegetables sprinkled or washed with infected water; using eating utensils, especially those used for milk, cleansed in infected water; eating raw oysters subjected to the absurd process of "fattening" in river water usually packed with bacilli; and improper screening from flies, which are known to carry bacilli from privy vaults on their feet and thus infect food.

NOTES FROM THE MUSEUM

The Museum is open to the public on Saturdays from 10 to 5, and on other week days from 10 to 12 and 1 to 5. Children unaccompanied by an adult are admitted only on Saturdays.

The BULLETIN will be sent by mail to any address for twenty-five cents a year. Back numbers of Vol. 2 will be supplied on request to new subscribers. A few copies of Vol. 1 (five numbers) can be had at twenty-five cents each.

If this paragraph is marked your subscription to the BULLETIN expires with this number. More work is being

done at the Museum every month, and if you wish to keep in touch with it wrap a quarter in paper and mail it to the Museum for a renewal of your subscription.

In consequence of the general revision and rearrangement of collections, which is in progress at the Museum, visitors will find considerable temporary confusion. Much time will yet be required to complete the installation of the Manigault Osteological Collection. Mr. William G. Mazyck, of Charleston, has undertaken a much-needed revision of the shells and is preparing a special exhibit of local shells, which will enable visitors to identify specimens of their own collected on nearby beaches. Announcement of the completion of the exhibit will be made in the BULLETIN. The preparation of the exhibit of local birds (described on page 19) has made some confusion in the general collection. A complete rearrangement of this collection is underway. Professor Daniel J. Martin, of Brooklyn, N. Y., is now engaged upon a much-needed general revision of the collection of rocks and minerals. A further account of his work will appear in the BULLETIN.

848 visitors were recorded at the Museum in February and 836 in January. The recording turnstile has been in use just a year, and it will be possible hereafter to compare the monthly attendance of successive years.

The policy of devoting a portion of the Museum lectures to dissemination of timely scientific information on subjects of public interest has met with such general approval that the Director is encouraged to hope that these simple discussions may help to enlist public opinion on the side of progressive modern science. The Museum notes with pleasure that the South Carolina Medical Society has just undertaken a similar line of work in a particular field, with its publication in the daily press of timely articles on hygiene and sanitation.

The Bulletin is published monthly from October to May by the College of Charleston and is devoted to descriptions of exhibits, reports of lectures, and notes from the Museum. Entered at the post office at Charleston, S. C., as second class matter.

BULLETIN

OF THE

COLLEGE OF CHARLESTON MUSEUM

EDITED BY PAUL M. REA

DIRECTOR OF THE MUSEUM AND PROFESSOR OF BIOLOGY

Vol. 2 CHARLESTON, S. C., APRIL, 1906 No. 4

HISTORY OF THE MUSEUM*

SKETCH OF THE LIFE OF DR. J. L. E. W. SHECUT AND OF THE ORIGIN OF THE MUSEUM

BY EOLA WILLIS

The ancestors of Dr. Shecut were French and during the early years of the Huguenot persecution in France, left that country and settled in one of the Cantons of Switzerland. Thence his father and mother, Abraham and Marie Barbary Shecut came to America, soon after their marriage, in 1768-9, and settled in Beaufort, South Carolina.

* As a means of gathering material for a history of the Museum, the BULLETIN will, from time to time, print biographical sketches of men who have contributed to its development, and other historical notes. Persons who are in possession of information on this subject are urgently requested to communicate with the Director of the Museum, or to prepare short articles for publication in the BULLETIN. We are often unable to verify all the statements of correspondents, and print them, therefore, on the authority of the authors. — EDITOR.

In the register of St. Helena Church, Beaufort, are recorded the birth and baptism of John L. E. W. Shecut and his brother Abraham. Their parents removed their residence from Beaufort to Charleston prior to 1779.

John Linnæus Edward Whitridge Shecut was born December 4th, 1770, and in early manhood rose to eminence in the medical profession as well as in scientific and literary lines. He studied medicine, first under a friend of the family, Dr. David Ramsay, physician and historian, and afterwards in Philadelphia, where he received his degree in 1791, at the age of twenty-one years.

He returned to Charleston and immediately began the practice of medicine, which he continued till his death.

Dr. Shecut was one of the earliest physicians in this country to use electricity in the treatment of disease, and in 1806 he exhibited to the public his electrical machine which he invented and used in his profession. He wrote many books and essays—among them the “*Flora Carolinænsis*,” published in 1806, which he said was designed to promote a taste for the study of Botany, and to simplify as much as possible the Linnæan system.

As the founder of the Antiquarian Society of Charleston, Dr. Shecut's connection with the Charleston Museum, is of special interest. We quote below from his “*Medical and Philosophical Essays*” (1819):

“At the commencement of the year 1813, the author submitted to a select number of his friends, the outlines of a constitution, for organizing a society to be called the *Antiquarian Society of Charleston*. The object[s] of this society were to be, *primarily*, the collection, arrangement and preservation of specimens in natural history; and of things rare, antique, curious and useful; and, *secondarily*, the promotion and encouragement of the arts, sciences and literature generally.

On the 20th May, 1813, the following gentlemen agreed to associate for the above purposes, and signed their names to the original outlines for a constitution, * * * Doctors RICHARD

L. LATHAM, JOHN L. E. W. SHECUT, ISAAC A. JOHNSON, JOHN S. TRECOT, and JOHN GRIMKE. Their first meeting as a society, was held on the 31st of the same month : at which, further measures were debated on, for the advancement of the society.

At their meeting of the 14th of June following, Dr. JAMES E. B. FINLEY, STEPHEN ELLIOTT, Dr. DAVID RAMSAY, the Honorable JOHN DRAYTON, the Honorable THOMAS BENNETT, BENJAMIN ELLIOTT. and Dr. ALEXIS DE CARANDEFEZ, attached themselves to the society as members.

* * * on the 30th of June * * * by the votes of a majority of the members present, the name of the society was altered to that of *The Literary and Philosophical Society of South-Carolina*; by which name it was incorporated in the year 1814.

The surprising progress of this society is a guarantee that the citizens of Charleston are awakening from their slumber, to the active promotion of science and literature : but this rapid progress was to be expected, from the happy choice of the society, in selecting STEPHEN ELLIOTT, as their president. * * *

The objects of the association were no sooner publicly known, than numerous donations of specimens, in every department of the arts and sciences, were liberally bestowed, with which to commence its Museum. These, with the cases and collection, presented by the *Charleston Library Society*, in 1814[*], began to assume a respectable and very flattering appearance.

The opportune arrival of that distinguished naturalist and practical chemist, Dr. FELIX L'HERMINIER, from Guadeloupe, with an extensive collection of specimens, the fruit of twenty years application, expense and industry, which he offered to the society, was an advantage, not to be lost sight of. Negotiations were immediately entered into with that gentleman, by a committee of the society. The citizens were also invited to co-operate with them in effecting the purchase of this collection, towards the establishment of a respectable and scientific Museum in Charleston.

Those persons who subscribed fifty dollars, on payment of that sum, became members for life. The State Legislature and the City Council, alive to the importance of this object,

*1815 according to the records of the Library Society. - EDITOR.

with a promptness and liberality, which will forever redound to their credit, contributed largely towards the purchase, and, with the sums subscribed by individuals, enabled the society to make a purchase of that valuable collection, which is now one of the chief, and perhaps, most interesting ornaments of the city.

The superior personal attention and talents of Dr. L'HERMINIER, were also enlisted in behalf of the society, by being appointed superintendent of the Museum. This was also an acquisition of importance; his practical knowledge in every department of science, and particularly that of chemistry, had already given a character to that department, which cannot fail to ensure its future progress. * * *

Our distinguished fellow-citizen the HON. THOMAS SUMPTER, minister, resident at Brazils, has lately enriched the Museum of the society, by presenting it with an extensive, splendid and very valuable collection of minerals, birds, and insects of Chili, and the Brazils. The society are also in a very especial manner indebted to the Hon. JOEL R. POINSETT, the Hon. HENRY MIDDLETON, SPEPHER ELLIOTT, Esq., Messrs. MACLURE, CARADEAUX, and other respectable individuals, for their valuable donations of specimens in natural history, and for which, their names have been honorably mentioned in the journals of the society.

* * * the society may be said to be in a flourishing condition. It consists of 138 members, many of whom are of the first standing in society, and of acknowledged literary and scientific talents. Its Museum is rich in an extensive collection of minerals, fossils and shells. The departments of Zoology, particularly those of Ornithology, Erpetology, Ichthyology and Entomology, are extensively filled. It is also rich in coins, medals and castings. The specimens of Art are also very considerable; and the whole are arranged in the most appropriate order by their late superintendent.

The library of the society, being for the most part confined to books of science, is yet in its infancy. * * * A fund is appropriated towards its particular establishment, which has been enriched by a donation of 750 dollars, from JOHN BLAKE WHITE, Esq. one of its members.

Upon the whole, this society may be said to be established upon such sure foundation, as cannot fail to ensure its ultimate success, and we look forward with pleasing anticipa-

tions to that period, when it will rank among the most useful and respectable institutions of the kind in America."

It is to be hoped that the renewed interest recently awakened in the Charleston Museum may fulfil the prophecy made for it almost a hundred years ago.

Dr. Shecut's scientific tastes have descended in a measure to his grandson, Major Edward Willis. Major Willis has always been very fond of Natural History, and has made fine collections of minerals, shells and fossil remains. He was early identified with the mining of phosphates from the river beds, and particularly of those owned by the State, and for years furnished information and statistics on this subject for the United States Government. The Charleston Chamber of Commerce appointed him to write the history of the discovery of phosphates in South Carolina.

Dr. Shecut was the founder and for a length of time President of the American Homespun Company, established in 1820, in association with William Laughton Smith, and it operated, we believe, the first cotton mill in the State. It was built near the lot of land now known as Barton's Mills, on the west side of Rutledge Avenue, opposite the lake.

Dr. Shecut married first, Miss Sarah Cannon, daughter of Dr. John Cannon of Edisto Island, on January 26th, 1792, and they had the following children: Mary, John Ramsay, Sarah Cannon and William Harral. He was married second in Charleston, February 7th, 1805, by the Rev. John H. Mellard, to Miss Susanna Ballard, daughter of Jesse Ballard and Elizabeth Skrine, his wife, of Georgetown, S. C., and their five children were as follows: Ann Jackson, Abraham Homespun, John L. E. W., Linnaeus Americanus, and Sophronia Lucenia.

Dr. Shecut died in Charleston, after a brief illness, June 1st, 1836, and was buried in Bethel church yard.

The obituary notice in the Courier and the many "Tributes of Respect" attest to the high regard in which he was held. One of these begins: "No short sketch of so distinguished and able a scientist could do him justice, for his usefulness commenced early in life and only ended with it," etc.

He always tried to awaken interest and enthusiasm among his associates for the high callings of life, and he was jealous for the reputation of his State.

We choose, in closing, a paragraph from one of his articles:

"Until the Carolinians are aroused to the formation of a permanent national character, and until the utility and vital importance of the arts, sciences and literature, form a predominant feature of that character, these things must and will remain the reproach of South Carolina."

HONORARY CURATORS

At a meeting of the Board of Trustees held March 31st, the following gentlemen were elected honorary curators in the Museum:—

Prof. Daniel S. Martin of Brooklyn, N. Y., Honorary Curator of Minerals, Rocks, and Invertebrate Fossils.

Mr. Wm. G. Mazyck of Charleston, S. C., Honorary Curator of Recent Shells.

Mr. Arthur T. Wayne, of Mt. Pleasant, S. C., Honorary Curator of Birds.

Prof. Martin, formerly Professor of Geology at Rutgers Female College, has been for many years a prominent member of the New York Academy of Sciences, and has been associated with Mr. Kuntz in preparing the government reports on Precious Stones in the Mineral Resources of the United States. His wide knowledge of mineral localities and of the history of other collections in this State, has given

him peculiar qualifications for the task of restoring lost localities and other records of specimens in the Museum. As a descendant of an old Charleston family, Prof. Martin has keen interest in the welfare of this city. Not only has he already enriched our collections by the gift and deposit of many valuable specimens, but in the event of the transfer of the Museum to the Thomson Auditorium, has offered to deposit with it his whole extensive and important private collection.

Mr. Wm. G. Mazyek is a student of conchology of fifty years standing. He has published numerous conchological papers in scientific journals and has been in correspondence with conchologists in every country of the civilized world. His collection of North American land snails is probably the finest in the world. Mr. Mazyek is at present engaged in revising the Museum collections of shells, untouched for many years; and also in preparing a special exhibit of local shells.

Mr. Arthur T. Wayne has been engaged in ornithological research for twenty-five years, and since 1884 has published steadily in the Auk and other ornithological journals. At the present time, Mr. Wayne is considered the authority on the birds of this state, and one of the best ornithologists in the South. His records, extending the range of many Western species to South Carolina, are among the most important of his contributions to ornithology, and a book now in preparation on the birds of the coast region of South Carolina is awaited with much interest. Mr. Wayne is assisting in the work of verification of the labels and records of the birds in the Museum.

This increase in the Museum staff is one of the gratifying results of the first year of renewed activity of the Museum. Under former conditions, work at the Museum was altogether curatorial in its nature, and the one or two

departments in which the curator was most interested and learned prospered at the expense of the others. Since the inauguration of the new policy at the Museum, exactly one year ago, it has become increasingly evident that the time and energy of the curator could not possibly be extended to cover the necessary accessioning and revision of each department, and provide for its care and growth, and also attend to the increasing opportunities for forwarding the educational side of modern museum management. The arrangement, catalogueing and providing for the increase of the valuable library of scientific books, the provision for public lectures, the preparation of special instructive exhibits, the publication of the BULLETIN, the preparation for active co-operation in the work of the school children—all these, and other manifold duties, both administrative and curatorial, have made necessary the help and advice of associates. The title of the curator was accordingly changed to Director, and the advice and help of experts enlisted by the appointment of honorary curators, specialists in the departments which they serve.

Another reason for gratification in securing the interest and aid of these scientists, lies in the hope, thus strengthened, that the College of Charleston Museum may once more become the rallying point for scientific men of the generation, and thus renew the brightness of its name, which Shecut, Elliott, Holbrook, Audubon, Bachman, and Agassiz made famous.

THE ELLIOTT HERBARIUM

The Stephen Elliott herbarium, one of the most valuable single collections in the Museum has been sojourning for two years at Biltmore, undergoing thorough cleaning and revision at the hands of the director and staff of the Biltmore Herbarium. A report upon its present condition is now in

preparation, and the home-coming of the collection is awaited with interest.

A recent examination by Professor Rea and some of his students of material stored in the basement of the library building has brought to light still another volume of this famous herbarium, containing specimens treated in the last pages of Elliott's Botany. This volume includes type specimens of *Euphorbia cordifolia* and *Euphorbia paniculata* in good state of preservation.

A fire and insect-proof safe has been purchased for the protection of this herbarium and other valuable specimens, papers and records belonging to the Museum, and thus the future of important possessions is secured from the vicissitudes which have too often befallen them in the past.

A NEW BUILDING FOR THE MUSEUM

The past year, while marking the beginning of the activity of the Museum as a factor in public education has been primarily a year of over-hauling and stock-taking.

The result is tremendous in its import for the Museum and for the city. Thousands of specimens, valuable for exhibition or for study are packed away and entirely inaccessible for either purpose because of absolute lack of space to properly arrange them. Such specimens as are on exhibition at present lose much of their value as instructive and interesting objects because of their crowded condition and the impossibility of arranging them with suitable illumination.

The collections have been found to be such, both in quantity and quality, as to hold an important position among the museums of the country. Without doubt the largest and most valuable museum in the South, it is surpassed only by the great museums of some northern cities.

As a result of these conclusions a strong movement has been set on foot to secure a building providing adequate

space and light for the housing of these collections. The building known as the Thomson Auditorium, situated on the southwest corner of Rutledge Ave., and Calhoun St., has been selected as admirably suited to the purpose.

It is splendidly located in an attractive portion of the city, readily accessible from all points by the two trolley lines passing it, surrounded by a public park, and readily convertible at comparatively small expense to the uses and needs of a public museum.

With every prospect of favorable action on the part of City Council, it only remains for the general public to demonstrate the sincerity of its approval of the plan by liberal contributions to the expense of removing and installing the collections. For this purpose six thousand dollars must be raised by popular subscription. Contributions of any amount will be received and acknowledged by the director of the Museum.

MARCH BIRDS

The following birds have been reported by members of the Natural History Society for the month of March, 1906. The list is classified according to Coues' "Synopsis of the Birds of South Carolina" (1868).

PERMANENT RESIDENTS.—Brown thrasher, American robin, mocking bird, catbird, bluebird, tufted titmouse, Carolina chickadee, white-breasted nuthatch, Carolina wren, long-billed marsh wren, pine warbler, cedarbird, loggerhead shrike, song sparrow, English sparrow, chipping sparrow, cardinal, towhee, red-winged blackbird, meadow-lark, boat-tailed grackle, purple grackle, crow, fish crow, blue-jay, phoebe, kingfisher, flicker, yellow-billed sapsucker, downy woodpecker, Southern hairy woodpecker, red-bellied woodpecker, pileated woodpecker, red-cockaded woodpecker, red-headed woodpecker, marsh hawk, Cooper's hawk, fish-hawk, sharp-shinned hawk, red-tailed hawk, sparrow hawk, black vul-

ture, turkey buzzard, Carolina dove, bob-white, Wilson's plover, killdeer plover, clapper rail, bald eagle, great blue heron, wood ibis.

WINTER VISITANTS.—Hermit thrush, ruby-crowned kinglet, golden-crowned kinglet, myrtle warbler, white-throated sparrow, Savannah sparrow, junco, vesper sparrow, rusty grackle, titlark, scaup duck, hooded merganser, red-throated diver, canvas-back duck, herring gull, ring-billed gull, pied-billed grebe, oyster catcher.

SPRING MIGRANTS.—Parula warbler, blue-gray gnat-catcher, Bartramian sandpiper, bank-swallow, white-bellied swallow.

SUMMER RESIDENTS.—Swainson's warbler, Maryland yellow throat, yellow warbler, yellow-throated warbler, purple martin, white-eyed vireo, nonpareil, chimney swift, swallow-tailed kite, little blue heron.

THE DR. EDMUND RAVENEL CONCHOLOGICAL COLLECTION

One of the most important recent additions to the Museum is the large and valuable conchological collection of the late Dr. Edmund Ravenel, of Charleston, which contains some 3500 species of land, fresh water, and marine shells from all parts of the world. Dr. Ravenel was a contemporary of Say, Lea, Conrad, Le Seuer, Gould, and others of the pioneers of conchological research in the United States, whose labors in the first half of the nineteenth century brought to the attention of the scientific world the wealth of new material which strewed our beaches from Nova Scotia to Mexico and abounded in the rivers and streams from the Atlantic to the Mississippi, and his intimate association and co-operation with these eminent students enabled him to obtain a large number of their types, or of species determined by their authors.

Two catalogues of this collection have been published, one in 1834, interesting as being the first catalogue of its kind published in America, and the other in 1874, since when the collection has been packed away in several cases at Dr. Ravenel's late home, and only now has it been possible to make arrangements by which it may become accessible to students. The collection will be classified, arranged, and prepared for exhibition by Mr. William G. Mazyck, our Honorary Curator of Recent Shells, whose early studies were encouraged and stimulated by Dr. Ravenel. The collection will be kept intact and, as memorial of its distinguished collector, will be known as the "DR. EDMUND RAVENEL CONCHOLOGICAL COLLECTION."

NOTES FROM THE MUSEUM

983 visitors were recorded at the Museum in March, an increase of 135 over the February attendance, and at least 400 over the March attendance of a year ago. In March, 1905, an attendant had not been provided for the turnstile, and many children repeated a number of times. The real number of visitors was probably less than half of the record for this year.

Much interest was aroused by the lecture on "The Occurrence of Precious Stones in the United States," given by Professor Daniel S. Martin, in Manigault Hall, March 27th. Professor Martin is a recognized authority on this subject, and treated his audience to a most interesting account of the diamonds of the glacial drift, the sapphires of Montana, the tourmalines of Maine and California, and the ancient turquoise mines of New Mexico and Arizona.

Mr. A. W. Riecke, of this city, recently presented to the Museum a number of minerals, rocks, and fossils, which have been added to the exhibition collection.

The Bulletin is published monthly from October to May by the College of Charleston and is devoted to descriptions of exhibits, reports of lectures, and notes from the Museum. Entered at the post office at Charleston, S. C., as second class matter.

BULLETIN

OF THE

COLLEGE OF CHARLESTON MUSEUM

EDITED BY PAUL M. REA

DIRECTOR OF THE MUSEUM AND PROFESSOR OF BIOLOGY

Vol. 2 CHARLESTON, S. C., MAY, 1906 No. 5

EXHIBITS AT THE MUSEUM

GENERAL REPORT ON GEOLOGY AND MINERALOGY

BY DANIEL STROBEL MARTIN, PH. D.

The College of Charleston Museum has long been noted for the richness of its material in the department of zoology, and on this side it was remarkably developed and advanced under the curatorship of the late Dr. Manigault. In the department of mineralogy and geology, however, but little has been done since the time of Prof. Holmes, and the collections had come to need much revision and rearrangement. It is true that both Dr. Manigault and Prof. Ashley obtained very valuable additions in these branches and the latter had begun a rearrangement of the material in accordance with a comprehensive plan outlined in his "General Guide to the Museum," published in 1901. But this work was only

commenced when his appointment on the U. S. Geological Survey led to his departure from Charleston and he had never had time, amid the pressure of his duties while here, to examine and arrange more than a small part of the accumulated material to which he himself refers in the Guide as needing systematic study.

The minerals, rocks and fossils belonging to the College had thus become much scattered in different parts of the Museum, and many of them were stored out of sight. The writer has been engaged in the work of gathering together and arranging this material, during the last two months, and is now prepared to present a brief general description of what the Museum actually possesses. In both departments the amount of material is quite large, and some of it is fine and valuable, but much has been put away through lack of space for its proper display. In these, as in all the departments, the need of more room is greatly felt and the proposed removal to the Thomson Auditorium would meet this need in an admirable manner.

The collection of minerals belonging to the Museum is composed, in the main, of several divisions, or portions, obtained at different times and from different sources. These are (1) a large number of good specimens dating back to the time of Prof. Holmes, who usually had them mounted and labeled on blocks. Among these are doubtless included many old specimens from the early days of the Museum. There are then (2) a choice selection purchased in the time of Dr. Manigault, from the well-known dealer, Prof. H. A. Ward, of Rochester, N. Y. and (3) a number obtained by Prof. Ashley from the various southern and western exhibits at the South Carolina and West Indian Exposition in 1902. All these, together with many others presented from time to time by various individual donors, are combined into a general illustrative collection.

In addition to these, there are two separate collections of

remarkable interest, which form special features of this Museum, and probably have not their like in any institution in the country. These are generally spoken of as (1) the Russian collection, illustrating the great mining region of the Ural mountains, and (2) the Shepard collection of phosphates made and presented by Dr. C. U. Shepard, Jr., illustrating all the forms and varieties of phosphate of lime and phosphate rocks, from all parts of the world, for comparison with those of South Carolina. Both of these were obtained during the curatorship of Dr. Manigault, in 1879, and from their special character, are kept distinct, and not merged in the general collection.

A brief account may here be given of the character and contents of these two interesting sets of mineral specimens.

The Russian collection contains 230 specimens, most of them of rather large size, presented by the Imperial Mining Institute at St. Petersburg. Precisely how this noble gift was secured for the Museum does not appear. If no record can be found here, inquiry will be made from the Imperial Institute, whence it can surely be supplied. It is a matter of great interest, to know through what agency this rare and valuable series of specimens was obtained. All of them are numbered, to correspond with a complete catalogue with exact localities.

The collection is mainly economic, consisting of ores of all important minerals mined in the celebrated Ural region. It contains also many rare minerals, and many handsome examples of the ornamental and semi-precious stones of the Russian mines, such as beryl, emerald, topaz, garnet, malachite, azurite, and the quartz minerals. Although mainly from the Ural mountains, it represents many other localities, ranging from Riga and Finland, across to Lake Baikal and the Altai mountains, and south to Baku on the Caspian. No such exhibit of Russian minerals can probably be found in any other Museum in the United States.

The same statement may safely be made with regard to the Shepard collection of phosphates. These were principally gathered by Dr. Shepard in a tour through Europe, visiting all the important localities. Those from the West Indies and the Pacific Islands were obtained by him from others. The object was to bring together as complete an illustration as possible of all the forms in which phosphate of lime occurs abroad, for comparison with those of our own country, and particularly of this State. Dr. Shepard described these foreign localities in a lecture given in Charleston, in 1879, a copy of which, now quite rare, is with the collection, and serves as a most valuable guide.

The specimens number about 200, representing the phosphate mines of Estremadura in Spain, of the Department of Lot, in France, of Hanover and other districts of Germany, and of a wide region between the Dnieper and the Volga in Russia; also the apatite and some rare minerals associated with it in Norway. The guano and related products of several islands of the West Indies and the Pacific, are also included and numerous examples of these and other phosphates as commercially prepared are shown in bottles.

In the department of geology there is enough material to furnish a good representation of the several branches included in that comprehensive science; but much is needed in the way of arrangement of what is already on hand, and much additional material in some of the branches is highly desirable for anything like full illustration. A comprehensive geological exhibit comprises four divisions in particular: these are (1) lithology—the different kinds and varieties of rocks—a branch closely akin to mineralogy, but distinct therefrom; (2) structural geology, the forms assumed and the structures developed in and by rocks of different kinds and under varying conditions; (3) economic geology, the materials employed in the useful and ornamental arts, as occurring in nature and sought and develop-

ed by man ; and (4) historical or biological geology—often called palæontology—the fossil remains, as found in rocks of different periods, illustrating the succession of life-forms in the history of the ~~G~~lobe.

Of these branches, the first and fourth are fairly represented ; the second and third have as yet but small illustration, save in the Russian and the Shepard collections, described under minerals, above. With regard to the third, also, a good deal was obtained by Prof. Ashley at the close of the Exposition and valuable additions are promised by the State Geologist, Prof. Sloan, as soon as there is room to display them. This is an extremely important and practical branch of geological science and there should certainly be in this city, accessible to the public, a good and full exhibit in economic geology, especially in the mineral resources of South Carolina. There is, however, at present, no space to arrange and display suitably even what the Museum now has and the very valuable and instructive exhibit now offered by Prof. Sloan, is conditioned on the acquisition of the Auditorium, or some adequate place for permanent display.

The palæontological collection contains much that is good and characteristic, representing the fossils of most of the important periods of geological time. At some points, however, it needs enlargement. The plants of the coal period are well represented, and so is the remarkable group of nautilus-like shells, the ammonites and their kindred, that characterized the mesozoic era. These are illustrated partly by actual specimens, and partly by a fine series of casts or models, procured from Prof. Ward, of Rochester, N. Y. A considerable series of the fossil shells of the Jura formation, and the subsequent Cretaceous, from Switzerland, was presented through Dr. Manigault, by the eminent geologist, Prof. DeSaussure, of Geneva. The largest representation is that of the Tertiary shells of this State,

gathered and classified chiefly by Professor Holmes, but including also many obtained by Professor Tuomey, in his earlier survey of South Carolina. These, it has not yet been possible to examine and classify. A number of them were arranged in their zoological relations and placed among the modern shells, rather than by themselves as fossils. This arrangement has both advantages and disadvantages. The fossil forms should preferably be all together and, if there are plenty of specimens, some may then be spared to place with the living types for comparison. Of course there is a good exhibit of the fossils from the neighboring phosphate beds, including many of the rarer and more remarkable vertebrate forms.

With the collections that have thus been briefly described, increased by other material that is promised as soon as there is proper accommodation for it, the Museum can easily be made equal in the departments of mineralogy and geology to the rank it has already attained in the zoological exhibits. The writer has recently been appointed honorary curator in these branches, and hopes to be able to bring them into a condition worthy of the institution and valuable to the public as a means of general instruction. If the Thomson Auditorium can be secured, as is now hoped, there will be ample space to display the material now possessed, and that which is already promised, and to arrange the collections in a systematic and scientific manner, where they will be permanently accessible for study, as they never have been before.

NATURAL HISTORY SOCIETY

The regular May meeting of the Natural History Society was held in Manigault hall, Tuesday afternoon, May 1st.

Action was taken by the Society on the nominations made by the Executive Committee, and the following officers were elected for the ensuing term :—President, Mr. F. M. Weston; Vice-President, Mrs. P. M. Ray ; Secretary and Treasurer, Mr. J. H. Taylor.

The Society decided to continue its bird work during the summer. Members who are in the city will hold regular monthly meetings, at which the record cards will be exchanged, and changes made in the exhibit of birds of the current season. Members who are in other parts of the State are requested to keep their records in manuscript and file them with the Secretary. It was suggested that preliminary observations be made on the life-histories of injurious insects with a view to determining the advisability of forming a separate section of the Society for this work.

In conclusion, Prof. Rea spoke very encouragingly of the work and prospects of the Society at the close of its first year.

NOTES FROM THE MUSEUM

With the publication of the May number, the BULLETIN takes its annual vacation. The first issue in the fall will be the October number.

During the summer months the Museum will be open to the public at the usual hours, but the active work of the staff will be performed elsewhere. The Director attended the meeting of the American Association of Museums, held in New York city on May 15, visiting the colleges and museums of this State, and of Washington, Baltimore and Philadelphia on his way north. Prof. Rea will be on the

staff of the Marine Biological Laboratory at Woods Hole, Mass., for the summer session of six weeks, July 5 to August 15.

Prof. D. S. Martin, Honorary Curator of Rocks, Minerals, and Fossil Shells, has finished a preliminary revision of his department, and is on his way north. He will undertake this summer a revision of the collections at Union College, Schenectady, N. Y. A report of Prof. Martin's work at the Museum is published in this issue.

The Geological Department of the Museum is again open to the public. The collections have been entirely re-arranged, but are not yet supplied with descriptive labels for exhibition. Manigault Hall is still closed to visitors by the necessity of its use for the storage and preparation of specimens.



SASSARD BROS. PRINT.

The Bulletin is published monthly from October to May by the College of Charleston and is devoted to descriptions of exhibits, reports of lectures, and notes from the Museum. Entered at the post office at Charleston, S. C., as second class matter.

BULLETIN

OF THE

COLLEGE OF CHARLESTON MUSEUM

EDITED BY PAUL M. REA

DIRECTOR OF THE MUSEUM AND PROFESSOR OF BIOLOGY

Vol. 2 CHARLESTON, S. C., OCTOBER, 1906 No. 6

HISTORY OF THE MUSEUM

THE COLLECTIONS OF THE CHARLESTON LIBRARY SOCIETY
FROM 1798 TO 1815

So far as is now known, the history of the Museum begins with the collections of the Charleston Library Society, which formed the nucleus of the museum of the Literary and Philosophical Society of South Carolina, as described in a recent number of the BULLETIN,* and which was itself transferred to the College of Charleston Museum in 1850.

A prolonged search among the records of the Library Society has recently brought to light a most interesting list of the specimens presented to the Museum from 1798 to 1808. This list is contained in a small notebook, together with lists

*Vol. 2, No. 4, April, 1906.

of books added to the Library in the same period, and gives no evidence as to how long the Museum had previously existed. The origin of the Museum was probably contained in the minutes of the Library Society, but the volume covering this period has, unfortunately, been missing for many years. When time can be found for examination of the files of local newspapers this important and interesting question may yet be answered, but this Museum probably has already the distinction of being the oldest public museum of general natural history existing in America to-day. The Harvard University collection of minerals, founded in 1793, is the only rival of which we are aware.

The following list is printed in full as a matter of record, and as an indication of the widespread and sustained interest in natural history in Charleston at this early period. It is interesting to compare it with the museum established in Philadelphia by Charles Wilson Peale, in 1785, which was said to contain in 1800 "a mammoth's tooth from the Ohio, and a woman's shoe from Canton: nests of the kind used to make soup of, and a Chinese fan six feet long: bits of asbestos, belts of wampum, stuffed birds, and feathers from the Friendly Islands, scarfs, tomahawks, and long lines of portraits of great men of the Revolutionary War." *

Both museums were mainly repositories of rare or curious objects, and it was only under the auspices of the Literary and Philosophical Society, and with the appointment of a scientific curator, that the Charleston Museum attempted to illustrate the general principles of natural history.

Articles for the Museum presented 5th June, 1798—by Captn. William Hall.—

A case containing a collection of Insects, from Surinam.—

*Goode, Museum History and Museums of History, p. 260, American Historical Association Papers, 1889.

An Apron worn by the Native of that Country, in full dress.

Arrows, for war, & for shooting fish, fowl & stunning birds.

A kind of Basket call'd Metaba thro' which the Spaniards express the poisonous juice of the Cassada—

The head of a Bird, call'd the Bannana Beak—

Wasp's Nest—from Surinam.—

A Porcupine Fish.—

A peculiar Species of the Craw fish.—

19th June—by Captn. Thos. Hall.

A Lance wood Bow—from South America.

Cherokee Diamond——

3'd Septr. by Mr. Thos. Branford Smith.

A beautiful Species of Spider, caught on his Piazza.

Octr. — Major Ladson.—

Indian Helmet—from the Sandwich Islands.

Presented 16th. June 1798 by Dr. Jas. Lynah.—

A Quiver, with poison'd Arrows, from Sierra Leona.

Part of a human thigh bone with oysters growing out of it.—

Species of the Moss & King Crabs—from St. Domingo.—

The Trunk fish—from do.—

Head of a Turtle taken at Calcutta & weighing upwards of 700 lb.——It died within 3 days sail of Charleston.—

Mr. Willm. Anerum Septr. 17th.

An Indian Hatchet, found at his plantation on the Congaree——

Mr. Jacob Ellison Novr. 14th.

Specimens of Fossils collected in this State, by Captn Cahusac.

Mr. John Edwards Do.

An Ostrich Egg.

Mr. Gilbert Davidson Decr. 13th.

Tomahawk of an Indian Chief—from Surinam——

W. H. Gibbes - - - - Decr. 20th.
 A Caterpillar taken from an Apple-Tree at New Port,
 Rhode Island—

J. S. Barker - - - Dec. 28th.
 A Pair of Chop Sticks, us'd by the Chinese instead of
 Spoons, when eating boil'd rice.—

J. P. Sargeant. Janry 1799—
 A young Porpoise—

E. Weyman ——— Febr'y. 20th.
 The Skin of a Rattle Snake.—

T. B. Smith ——— March 20th.
 East Indian Cane

D. Doyley
 Specimen of very fine Clay, for Potter's ware

C. P. Fraser
 Bill of the Albatross. See Buffon's Birds, Vol. 9th, 289—
 Species of the Beetle.

March 30th.
 Specimen of the Lacewood—from St. Domingo.

Capt'n. Willm. Hall
 Jaws of Bull Dog, a species of Shark.—

Monsr. Godard—April 5th.
 Head of the Albatross & Bones of Wings
 Jaws of the Porpoise.—
 Do.— of a fish unknown.—

Abraham Motte - - - 29th.
 Specimens of Clays &c,—found in the Neighborhood of
 Columbia.—

Mr. Frink - - - - May 7th.
 Head & Claw of the Pelican—

Dr. Hahnbaum - - - May 25th.
 Specimens of rich Iron Ore from Derbyshire—
 2 Scotch Pebbles — from Fifeshire, — on the Firth of
 Forth.—

I. B. Holmes - - - - 28th.
 A Number of Shells, cut out from a Grindstone—
 Large Claw of a Stone Crab.—
 J. Ratcliffe Junr. - - - June 22d.
 Smaller Tusks of an Alligator, 14 feet long.—
 Captn. T. Hall - - - July 6
 Four Indian Arrows.—
 Mr. T. Parker - - - - 17th.
 A Gold fish.—
 General Pinckney Augst. 31st.
 An Indian Hatchet
 Doctr. Harris Oct. 9th
 American blistering flies, gathered near Philadelphia.—
 W. S. Smith - - - Nov. 26th.
 Rib of the Mammoth, from Waccamaw.—
 E. Weyman
 Indian Chisel & Hatchet from an old Indian burying ground
 at Goosecreek
 G. Aertsen 1860
 Foot of an African deer
 Chancellor Burke
 Tusk of a Boar, kill'd near Ashley Ferry.—
 W. A. Cheves - - - 15th April
 Flying Frog Fish—from Martinique
 Mr. John Fraser. 18th Do.
 Part of the Tusk of the Mammoth found in Siberia
 Specimen of the Lapis Lazuli—from the Siberian Mines
 Mr. Willm. Ancrum - - - June 10th.
 Crystal—from the Congaree
 Mr. Chas. Fraser - - - July
 11 petrified Teeth found in a Creek near Broad River in
 Prince William's Parish
 A Star Fish
 E. Horry - - - Aug. 20th.
 A fungous substance form'd between two wet pine boards
 at Mr. Bowman's Mills.—

- Mr. Poinsett 20 Novr.
Two Crystallizations and a collection of Scotch pebbles.—
Mr. Chas. Fraser Decr.
A Crystalline Spar—found near Santee.—
Thos. B'd. Smith Esqr. 23d Decr.
The Proboscis of the Squalus or Saw fish, of the Shark
kind, found on the Beach of Simmons's Island. —
D. Bailey - - March 1801.
Two Petrefactions from Whitby in Yorkshire
His Excellency Governor Drayton - March.
Rock Crystal from Greenville District, So. Carolina.
Mr. Rhodes. Do.
Humming Bird & Old Wife Fish, Young Alligator
N. Russell, Esqr. 19th. Augst.
An Armadillo—from So. America —
Mr. John Hicks 26th.
An Indian House, with their warlike & household imple-
ments.
B'd. Elliott, Esqr. 7th. Septr.
uncommon Worm from the Vine of the Tomatoes.
John D. Lewis 28th. Octr.
A Gourd from Demarara, ornamented by the Arrowanka or
Buck Indians—
John Deveaux Esqr. 1st. Decr.
An Indian Instrument found in a cotton field in the Island
of Nassau—
E. H. Bay Esqr. 10th Dec.
Rattles of a snake, kill'd at the High Hills of Santee
Joseph Alston Esqr. 29th. Janry. 1802
A Basket made by French Nuns at Trois Rivières in Canada,
of Maple Bark & Porcupine Quills, & containing a specimen
of the Wild Rice of that Country.
Mr. Rhodes 1st May.
An African Belt & Pouch
Mr. Rogers ———
A chicken with six legs—

Josiah Smith Esqr.

Do. with two heads—

J. F. Grimke, Esqr.

A Clam Shell & two teeth from Colo. Rumph's Lime kiln
near Orangeburgh.

Genl. Pinckney

22d July

A Concretion found in a Clam—at Pinckney Island

Major Saml. Wragg

6 Sept.

Singular Claw of a Stone Crab—from North Island.

Pratt

Cloth from Kamschatka—by Capt. Ingraham of Boston.

Mr. Maxwell

20th. Novr.

A Petrefaction from a Cave near the Matazas in the Island
of Cuba.

Mr. Macfarlane

Do.

From the Mandingoes on the Coast of Africa—Part of the
Skin of a large Snake—Bow & Arrows—Belt & Pouch—Dag-
ger—Hammock—Sandals—Snuff box—Machine to guard their
legs against the snakes—& an Arabian Manuscript.

Dr. S. D. Gervais

4th.

10 Specimens dug from the rock at Clifden near Bristol

2 Pieces of Stone from Gibraltar.

Mr. Pratt

27th Janry, 1803

A Petrefaction from So. Edisto & a shell found within a
similar one of a larger size.

Mr. ———

Two Petrefactions from a Cave near Bennington

J. Drayton Esqr.

An Indian Pipe & Tobacco Pouch of the pole Cat's Skin
presented to him by a Cherokee Chief.

S. Mackintosh Esqr.

Skin of a Flying Squirrel, stuff'd

Dr. Dart

25th March

Two Petrefactions from a Cave near the Sweet Springs in
Botetourt County, Virginia.

Mr. John McLure	15th. June
A Ball of Hair, found in the Stomach of an Ox at Tortola.	
Mr. J. Dullas	
2 Specimens of Marble from Rhode Island, containing a portion of asbestos,	
Dr. D. Ramsay	
Tooth of a Mare, with a Letter from Chancellor James	
Mr. Clitherall	
Chinese Lady's Shoes	
Mr. John White	
Pair of East India Slippers	
Mr. Poinsett	
Specimens of Volcanic productions from Etna & Vesuvius & Crystal &c, from Mont Blanc	
Dr. Dalcho	23d March 1805
Ornaments worn in the upper lip & round the ankle & wrists by the female Negroes of the Eastern Coast of Africa & an Assaygar used by the Men.	
Skull & Tusks of a Wild Hogg, who perished by their growing into his jaws, from the Plantation of Colo. Deveaux on the Island of Little St. Salvador.	
Sundry Articles from the River St. John on the Grain Coast of Africa by Mr. Lowe May 1808.	

The next record of this collection is found in the minutes of the quarterly meetings of the Library society for the 15th. of March and the 21st. of June 1815, as follows—

“On motion Resolved, that it be referred to the Book Committee, to report on the expediency of giving to the Philosophical & Literary Society the collection of natural curiosities belonging to the Library Society, together with the cases containing them.”

“The Book Committee also Report in favour of giving to the Philosophical Society, the Natural Curiosities belonging to this Society, together with the cases containing them.”

RECENT ACCESSIONS

One of the most important additions to the Museum during the summer months is a mounted specimen of the Limpkin or Crying-bird (*Aramus giganteus*) taken by Mr. W. L. Harris, in his yard on Water Street, Charleston, in July, 1904. The Limpkin ranges from Central America and the West Indies north to Rio Grande Valley and Florida. The only other record of its occurrence as far north as South Carolina is that published in the Auk for April, 1906, by Mr. A. T. Wayne, who has the skin of a Limpkin taken in Aiken County in 1890.

In September the Museum received from Mr. Kressel, of the Terry Fish Company, a specimen of the Short Big-eye (*Pseudopriacanthus altus*), taken on the Grouper Bank, off Georgetown, in 30 fathoms of water. Unfortunately the beautiful red color of this fish cannot be preserved, but the specimen is of scientific importance as a record of the northern limit of the adults of this species, though the young may be carried north in the Gulf Stream as far as Rhode Island. Specimens have also been taken on the Grouper banks by C. C. Leslie at rare intervals.

Several specimens of *Aplysia*, the sea-hare, were taken in the harbor during the summer, and one of them was given to the Museum. *Aplysia* is a gasteropod mollusc, about six inches long, which emits a violet fluid when molested. *Aplysia* is very rare about Charleston.

The invertebrate collections have been largely increased by material collected by the Director during the summer and by purchase from the Laboratory at Wood's Hole, Mass. Among many other interesting and beautiful specimens is a fine *Physalia*, or Portuguese man-o'-war, which is one of a fleet of more than 70 blown into Vineyard Sound from the Gulf Stream. The Director hopes to have the invertebrate collection arranged for exhibition during the winter.

NOTES FROM THE MUSEUM

After a vacation of four months, the BULLETIN again greets the friends of the Museum.

The meeting of museum directors and workers in New York City May 15 and 16 for the purpose of organizing an American Association of Museums is of special interest to friends of the Charleston Museum. The Museums of the United States, North, East and West; the Museums of Canada and Honolulu; and of several countries of South America were represented, either by delegates or letter. It is worthy of note that the Charleston Museum was the *only* institution from the entire South to be represented. The effort now being made to renew the former activity of this Museum elicited much interest among members of the Association.

Mr. Henry Laurens has been appointed Student Assistant in Osteology, and will continue his work on the Manigault Osteological Collection.

Mr. F. M. Weston has been appointed Student Assistant in the Department of Birds, and will continue the work carried on last year by Mr. Salley.

The October meeting of the Natural History Society was held in Manigault Hall, Tuesday, October 9th. President Weston described the Winter Visitants for the benefit of the new members, and Mrs. Rea demonstrated the seasonal collection of local birds. Valuable records for all the summer months were turned in by several members, and the work will be continued through the winter with renewed enthusiasm. All persons who are in any way interested in birds are invited to attend the meetings of the Society. During the winter the regular monthly meetings will be held in Manigault Hall, the first Thursday in each month, at 4.30 P. M.

The Bulletin is published monthly from October to May by the College of Charleston and is devoted to descriptions of exhibits, reports of lectures, and notes from the Museum. Entered at the post office at Charleston, S. C., as second class matter.

BULLETIN

OF THE

COLLEGE OF CHARLESTON MUSEUM

EDITED BY PAUL M. REA

DIRECTOR OF THE MUSEUM AND PROFESSOR OF BIOLOGY

Vol. 2 CHARLESTON, S. C., NOVEMBER, 1906 No. 7

LOCAL FAUNA*

BIRD LIFE OF A CITY GARDEN

By HERBERT RAVENEL SASS

The following is a list of the species of birds that I have seen in my garden in the southwestern part of the city. To be exact, I should state that the list includes some species—fifteen in number—which have never been seen to *alight* in the garden, but which have been observed flying over it. With the exception of five species, the list is based on records made during 1902, '03, '04, '05, and '06. These five—the red-tailed hawk, the bald eagle, the bob-white, the woodcock, and the brown pelican—were observed prior to 1902 and, with the probable exception of

* Articles on this subject will appear in the BULLETIN from time to time. This, the first of the series, is written by a member of the Natural History Society and should stimulate the interest, not only of students, but of every lover of bird life.—EDITOR.

the eagle, have not been seen in the garden since. The large number of species included in the list is probably due to two causes:—the fact that the “garden” is not a garden at all, but a scattered grove of large trees, mainly elm, hackberry, and mulberry, with an abundance of smaller trees and bushes; and, secondly, to the close proximity of the Ashley River, which practically touches the garden.

1. **Least Grebe or “Diver.”**—On rare occasions I have seen “divers” flying over the garden. From the piazzas overlooking the river, one or two may be seen, sometimes close in shore, on almost any day from December to early March.

2. **American Herring Gull.**—Frequently passes over during the winter months.

3. **Ring-billed Gull.**—Probably some of the gulls which pass overhead belong to this species. I have not learned to distinguish it at a distance from the herring gull.

4. **Common or Least Tern.**—Occasionally seen passing over in autumn.

5. **Black Tern.**—Somewhat rarer than the preceding; occasionally observed in autumn.

6. **Brown Pelican.**—Six or more years ago, on the morning after a severe gale, I saw a pelican in the little strip of marsh by the river-shore.

7. **Canada Goose.**—Very rarely a flock of wild geese may be seen passing overhead. I have seen them only in April.

8. **Great White Heron or Egret.**—On September 14, 1902, a fine specimen of this rare bird passed over the garden.

9. **Great Blue Heron.**—Occasionally seen at all seasons

passing over. In April, flocks of from three to twenty are sometimes seen.

10. **Little Blue Heron.**—Occasionally seen from April to late October. Seldom actually alights in the garden, but is generally observed flying over or fishing in the shallows by the river-shore.

11. **Green Heron or "Skeow."**—The commonest heron in the garden, in spring often alighting in the trees near the house. It is seen at frequent intervals from about mid-April till late October.

12. **Night Heron (Black-crowned?).**—The guttural cry of this bird as it passes overhead is a familiar sound on still October nights.

13. **Clapper Rail or Marsh Hen.**—The little patch of marsh by the river is, at times, the temporary hunting ground of one or two rails; and sometimes unusually high tides drive them up on the dry land.

14. **American Woodcock.**—One very cold winter day, six or more years ago, a woodcock perched for some time on a tall stump not twenty feet from the house.

15. **Kildeer Plover.**—Occasionally in winter a small flock of kildeers passes over.

16. **Bobwhite or Partridge.**—On one occasion, six or more years ago, in unusually severe weather and when snow was on the ground, I saw a bobwhite in the garden.

17. **Common or Mourning Dove.**—A rare autumn visitor. Once or twice I have seen a dove in the garden in September.

18. **Turkey Buzzard.**—To be seen at rather long intervals all the year round.

19. **Black Vulture.**—To be seen passing over every day. It seldom lights in the garden and, when it does, is usually promptly attacked by the mocking birds.

20. **Sharp-shinned Hawk.**—A rather frequent visitor

from mid-October to mid-April. It destroys a good many English sparrows.

21. **Cooper's Hawk.**—A rare autumn and winter visitor. It is not satisfied with sparrows, but goes after larger game such as mocking birds and cardinals.

22. **Red-tailed Hawk.**—Observed only once in the garden, six or seven years ago, I think in November.

23. **Bald Eagle.**—On one occasion, six or more years ago, I saw an eagle sweep rapidly over the garden. On December 21, 1905, a bird was seen very high in the air which was almost certainly a bald eagle.

24. **American Sparrow Hawk.**—A rare autumn and winter visitor.

25. **American Osprey or Fish Hawk.**—To be seen fairly often passing overhead from April to October.

26. **Yellow-billed Cuckoo or "Raincrow."**—Fairly common from mid-April to mid-October.

27. **Belted Kingfisher.**—A fairly common visitor, especially during autumn and winter.

28. **Southern Hairy Woodpecker.**—A very rare visitor. I have only seen it twice in the garden—on July 3, 1902, and on December 22, 1905.

29. **Downy Woodpecker.**—A rare visitor, more likely to be seen in July and August than at any other time.

30. **Yellow-bellied Sapsucker.**—A not unusual winter visitor, most likely to be seen in very cold weather.

31. **Red-headed Woodpecker.**—A rare spring and summer visitor.

32. **Red-bellied Woodpecker.**—Observed in the garden only on one occasion—April 6, 1905.

33. **Flicker or Yellowhammer.**—A common autumn and winter visitor, especially abundant in September and October.

34. **Nighthawk or Bull Bat.**—Up to two years ago, this

was a rare bird in the garden. In August and September of 1905 and 1906, however, it was often seen passing over, becoming much rarer in October and disappearing entirely after the first week of that month. Occasionally it is seen in spring—late April and May.

35. **Chimney Swift.**—A very common summer resident. Arrives usually about the middle of March and departs in late October.

36. **Ruby-throated Hummingbird.**—A common summer resident, sometimes breeding. Arrives usually in late March and is not often seen after the first week of October.

37. **Kingbird.**—Common from early April until late summer. It becomes rarer in autumn and is seldom seen after the first week of October.

38. **Great Crested Flycatcher.**—Common from early April till late summer. It sometimes breeds. With the exception of the mockingbird, the crested flycatcher is the worst bully in the garden.

39. **Phoebe.**—A fairly common autumn and winter visitor.

40. **Blue Jay.**—A rare autumn visitor, most likely to be seen in October.

41. **Common Crow.**—Occasionally seen passing over at all seasons.

42. **Fish Crow.**—More abundant, I think, than the preceding. The close similarity of these two crows renders it very difficult to distinguish between the two species, but I think the fish crow is the commoner.

43. **Bobolink or Ricebird.**—Occasionally observed in May. To be seen fairly often passing over in early autumn.

44. **Red-winged Blackbird.**—A rare winter visitor.

45. **Meadow Lark.**—A not unusual visitor in late autumn and winter.

46. **Orchard Oriole.**—A common summer resident, often breeding in the garden. Arrives in early April and is seldom seen after August.

47. **American Goldfinch.**—A fairly common winter bird, especially during unusually cold weather. Small flocks are seen at frequent intervals from November until late March.

48. **White-throated or Peabody Sparrow.**—At least one pair of white-throats spend each winter in the garden, arriving usually in early November and remaining until late April. I have heard them singing even in the coldest January weather.

49. **Song Sparrow.**—During the first three days of November, 1906, song sparrows were quite abundant in the garden, though I had never observed them there previously.

50. **Chewink or Towhee.**—A rare winter visitor, coming only in very cold weather.

51. **Cardinal or Redbird.**—A permanent resident, at least one pair living always in the garden and breeding there. In the garden, this species sings only occasionally in winter, though in spring it is a tireless songster.

52. **Nonpareil or Painted Bunting.**—A familiar summer resident, at least one pair always breeding in the garden. Arrives usually about mid-April, the males appearing some days in advance of the females. Seldom seen after the first week of October. Its sweet drowsy song is perhaps the most familiar bird-music of late spring and summer.

53. **Scarlet Tanager.**—Observed only once in the garden—May 3, 1905.

54. **Summer Tanager or Summer Redbird.**—A com-

mon spring and summer bird, arriving usually about the middle of April. It is less often seen as the season wears on, and I have no record of it in the garden later than August.

55. **Purple Martin.**—A common spring, summer, and autumn bird, arriving in late March and departing in late October.

56. **Barn Swallow.**—A frequent visitor in spring, summer, and autumn. Seldom seen after mid-October.

57. **White-bellied or Tree Swallow.**—In the garden I have seen this bird only in April and October. It is never very common.

58. **Bank Swallow.**—An irregular, but not unusual visitor, especially during August, September, and the first half of October.

59. **Cedarbird or Waxwing.**—A common bird from late February until about mid-April. Arrives usually about February 22 (earliest record January 28, 1905). Feeds mainly on sugar-berries and privet-berries, and, if the mulberries ripen early, sometimes remains as late as May 15 to enjoy them. The cedarbirds travel in flocks, sometimes of very large size.

60. **Loggerhead Shrike or Butcher Bird.**—A common bird all the year round. One of the very few that the mocking bird will not bully. Feeds largely on green lizards except in winter when the latter are for the most part hibernating. In the garden, the loggerhead seems never to prey on small birds.

61. **Red-eyed Vireo.**—A spring and autumn migrant, never observed in the garden between May and late August. Arrives early in April and is commonest in late August and September. Seldom seen after the middle of October.

62. **White-eyed Vireo.**—A spring and autumn visitor,

arriving usually a little earlier than the preceding species and departing at about the same time. Never breeds and never winters in the garden.

63. **Black and White Creeper.**—A spring and autumn visitor, commonest in October. Arrives in late March or early April, and is not apt to be seen after the latter month until late August. During September it is occasionally observed and is more often seen during the first half of October than at any other time.

64. **Prothonotary Warbler.**—A very rare late-summer visitor.

65. **Blue Yellow-backed or Parula Warbler.**—A spring and autumn visitor, commonest in spring. It arrives in late March or early April, and is seldom seen after the latter month until October, when one or two are usually observed.

66. **Summer Warbler or Yellow-bird.**—A spring and autumn migrant, commonest in late April.

67. **Black-throated Blue Warbler.**—A spring and autumn visitor, never observed between April and September. Commonest in late September and early October. It is a curious fact that females of this species are comparatively seldom seen in the garden.

68. **Yellow-rumped or Myrtle Warbler.**—The garden's commonest winter bird. Arrives usually in late October (earliest record for the garden, October 11), and remains until early May. Most abundant from December until late March, especially during "cold waves."

69. **Yellow-throated Warbler.**—A rare bird in the garden, sometimes seen in early spring.

70. **Pine Warbler.**—A very rare winter visitor, very seldom seen and then only during unusually cold weather.

71. **Ovenbird.**—A rare spring and autumn migrant, oc-

casionally seen in late March and April, September and October.

72. **Louisiana Water-thrush.**—Observed only once in the garden—September 1, 1906.

73. **Maryland Yellowthroat.**—A spring and autumn visitor, commonest in late September and early October.

74. **American Redstart.**—A spring and autumn migrant, much commoner, however, in autumn. From early September to late October is the season for redstarts in the garden.

75. **American Pipit or Titlark.**—In December, January, and February it is not very unusual to hear the notes of a flock of titlarks as the birds pass overhead. Occasionally they alight in the garden.

76. **American Mockingbird.**—A permanent resident, common at all seasons and breeding regularly. The mocker is the despot of the garden and a stout fighter as well as a shameless bully.

77. **Catbird.**—An autumn, winter, and spring visitor, commonest in early October, when it comes in large numbers to feed on the Virginia creeper berries.

78. **Brown Thrasher.**—A spring and autumn visitor, commonest during the first half of October when the berries of the Virginia creeper ripen.

79. **Carolina Wren.**—A frequent visitor to the garden at all seasons, occasionally breeding there.

80. **Long-billed Marsh Wren.**—Near midnight of October 14, 1906, a marsh wren flew into a window of the house—the only occasion I have seen it in the garden.

81. **Brown-Creeper.**—A rare spring and autumn visitor.

82. **White-breasted Nuthatch.**—A rare autumn visitor, most likely to be seen in early October.

83. **Red-breasted Nuthatch.**—On October 29, 1906,

two of these birds, a male and a female, were seen in the garden. They remained several days, being last observed November 2. These are the only occasions when I have seen this rare species in the garden.

84. **Tufted Titmouse.**—Observed only once in the garden—October 29, 1906. It is strange that a bird, so common in the woods near the city, should never have been observed in the garden before.

85. **Golden-crowned Kinglet.**—A cold-weather bird. A rather erratic visitor to the garden from November to April, sometimes common for days at a time, sometimes seen only once or twice in an entire season.

86. **Ruby-crowned Kinglet.**—A common autumn and winter visitor, much more often seen than the preceding species. Commonest during severe weather.

87. **Blue-gray Gnatcatcher.**—A rare April visitor.

88. **Hermit Thrush.**—An occasional visitor during autumn and winter.

89. **American Robin.**—A rare winter visitor, coming only in the coldest weather. January and February are the robin months.

90. **Bluebird.**—A rather rare spring visitor, occasionally coming to the garden in late March, April, and May.

RECENT ACCESSIONS

A FRIGATE BIRD TAKEN ON SULLIVAN'S ISLAND

The Museum has received, as the gift of Mr. George Aldret, a specimen of the Frigate Bird (*Fregata aquila*), taken on Sullivan's Island, between 7 and 8 a. m., Saturday, October 20th. At this time the Weather Bureau station at Charleston recorded a wind velocity of 24 miles per hour from the north. At 5 p. m., however, a velocity of 63 miles per hour was attained.

The Frigate Bird ranges over the tropical and sub-tropical seas, occasionally straying as far north as Nova Scotia. But one other specimen has been recorded from South Carolina—that taken by our Honorary Curator of Birds, Mr. A. T. Wayne, in the great hurricane of Aug. 27th, 1893.* Yet it is not strange that this bird is seldom taken for it is strictly pelagic in habit, seldom visiting the land except to breed or in heavy storms. Both specimens which have been taken here confirm the reputation of the bird as a hurricane signal.

Frigate Birds have a greater expanse of wing in proportion to the weight of the body than any other bird and are unsurpassed in power of flight, soaring for hours without motion of the wings. The great wing muscles are supported by a peculiar modification of the pectoral girdle, the furcula having coalesced both with the keel of the sternum and with the coracoids and the latter with the scapulas, forming a frame of unusual rigidity. The buoyancy of the body is said to be assisted by inflation of the gular sac, which is also used for the storage of food.

Frigate Birds capture fish at the surface of the sea or pursue gulls and terns, and force them to disgorge their prey. They are unable to swim, since the feet are incompletely webbed. In fact, they seldom even alight on the water for the feathers are not waterproof and the great length of the wings and tail make it almost impossible to take flight from a flat surface. The same difficulty hampers these birds on land for their legs are ridiculously short. The thick bushes of the breeding grounds are filled with the bodies of birds which, failing in their efforts to take flight, have been unable to disentangle themselves. It would be difficult to find a better example of extreme specialization than the Frigate Bird.

*See the Auk, Vol. 11, Jan. 1894, p. 85.

NOTES FROM THE MUSEUM

The BULLETIN will be sent by mail to any address for twenty-five cents a year. The mailing list is undergoing revision and any who have failed to receive recent issues will be supplied on application to the editor.

The meetings of the Natural History Society are held in Manigault Hall, the first Thursday in each month, at 4:30 p. m. All who are interested in our local birds are invited to attend. At the November meeting Mr. J. W. Wilson read a paper on the Frigate Bird, an abstract of which is printed in this number of the BULLETIN.

As a part of the University Extension movement, Professor Rea is giving a course of lectures on "Organic Evolution and Kindred Biological Problems." Information and tickets can be had at the Museum.

The Museum has received, as the gift of Mr. Henry Booth, of Poughkeepsie, N. Y., a very fine series of fossils which will nearly double the palaeozoic exhibit. Further notice of this collection will be given when it is ready for exhibition.

All departments of the Museum are now busy with a revision of the records of specimens and with the preparation of copy for new labels. An immense amount of such work must be done to attain to the standard of modern museum efficiency.

The Museum is open to the public on Saturdays from 10 to 5 and on other week-days from 10 to 12 and 1 to 5. Children unaccompanied by an adult are admitted only on Saturdays.

The Bulletin is published monthly from October to May by the College of Charleston and is devoted to descriptions of exhibits, reports of lectures, and notes from the Museum. Entered at the post office at Charleston, S. C., as second class matter.

BULLETIN

OF THE

COLLEGE OF CHARLESTON MUSEUM

EDITED BY PAUL M. REA

DIRECTOR OF THE MUSEUM AND PROFESSOR OF BIOLOGY

Vol. 2 CHARLESTON, S. C., DECEMBER, 1906 No. 8

A NEW EPOCH IN THE HISTORY OF THE MUSEUM

A series of articles on the History of the Museum, appearing from time to time in the BULLETIN, have shown that this is probably the oldest existing museum of general natural history in America, having originated in 1798 or earlier under the auspices of the Charleston Library Society. In 1815 the collections and cases were transferred to the newly organized Literary and Philosophical Society of South Carolina, which largely increased them and for many years maintained a public museum in Chalmers Street.

In 1850 the collections were transferred to the College of Charleston and the Museum entered upon the third epoch of its history, receiving the benefit of the interest aroused by the meeting in Charleston of the American Association for the Advancement of Science, and the stimulus of the work of the elder Agassiz in the city.

During the last half century, in spite of war and earthquake, the Museum has had a steady growth, until it is to-day the largest museum in the South. In recent years however, the overcrowding and insufficient lighting of the rooms and their inaccessibility have prevented the Museum from serving the public in proportion to its size and excellence and its support has consequently dwindled until, in 1904, City Council appropriated but \$250 for its maintenance. Serious deterioration having already set in, this diminished support spelled extinction for these collections in which many thousand dollars of public and private money had been invested during more than a century.

The following year, however, in response to the plans of the present Director of the Museum for the reclamation of the collections and their utilization for public instruction, City Council generously increased the appropriation. But active work was no sooner commenced than the entire lack of space for preparation and storage of specimens as well as the deficiencies of the exhibition rooms made it clear that larger and better quarters were necessary if the proper mission of the Museum was to be fulfilled.

THE NEW BUILDING

As these pages go to press arrangements are being concluded whereby the City has leased, at a nominal rental, the building now known as the Thomson Auditorium for the uses of the Museum. The building is situated in Cannon Park on Rutledge Ave., and is accessible by street car lines from all parts of the city. It will afford about 35,000 square feet of floor space for exhibition and as much more for offices, library, reading room, storage and preparation rooms, laboratories, and lecture rooms. The consummation of these plans provides for the suitable utilization of this building, erected in 1899 with funds bequeathed to the City by the late John Thomson, Esq., whose memory will be perpetuated by a tablet to be placed

in the hall of the new Museum. This institution, for more than a century identified with the learned societies of this City, will continue to be administered by the trustees of the College of Charleston and will hereafter be known as THE CHARLESTON MUSEUM.

FINANCIAL SUPPORT

The financial operations of the Museum will be comprised in three accounts.

City Maintenance Account.—As is customary with public museums, our contract with the City provides for an annual appropriation by City Council for the maintenance of the Museum. Against this account will be charged the running expenses of all departments not specially provided for.

General Account.—As a means of supplementing the city appropriation for maintenance and of providing for the growth and development of the Museum, the following resolutions have been passed by the board of trustees.

RESOLVED: That the contribution of \$1,000. or more to the funds of the Museum, at any one time, shall entitle the person giving the same to be a **BENEFACTOR** of the Museum, with all the rights and privileges pertaining thereto.

That the contribution of \$500., at any one time, shall entitle the person giving the same to be a **PATRON** of the Museum, with all the rights and privileges pertaining thereto.

That the contribution of \$25., annually, shall entitle the person giving the same to be a **SUSTAINING MEMBER** with all the rights and privileges pertaining thereto.

That the contribution of \$10., annually, shall entitle the person giving the same to be an **ANNUAL MEMBER**, with all the rights and privileges pertaining thereto.

That the Trustees may elect to either of the above degrees, on the nomination of the Director of the Museum, any person who shall have given to the Museum, books or specimens to the value of twice the amount in money requisite for admission to the same degree.

That the Trustees may also elect **HONORARY FELLOWS**, on the nomination of the Director of the Museum.

All contributions to the funds of the Museum, other than annual fees, will, unless given for a specific purpose, be invested

as a general endowment. All annual fees of members, together with the income from the general endowment, constitute the general fund.

Special Accounts.—Contributions to the funds of the Museum, whose principle or income is to be used for specific purposes constitute special accounts.

The contract with the City provides a special fund for the remodelling of the building for use as a museum but the transfer and installation of the collections is dependent upon the development of the general fund.

PRIVILEGES OF MEMBERS

In its new building the Museum will be open to the public, without charge, on Wednesday and Saturday of each week. On other week days an admission fee of 25 cents will be charged. School teachers or classes accompanied by a teacher will, however, be admitted free on pay days.

The privileges of members will include admission on pay days, tickets to members' lectures, and copies of Museum publications.

Annual Members will receive 1 season ticket admitting member and party on pay days, 2 single admission tickets (transferable), 2 tickets to members' lectures, the Bulletin of the Museum, and the privilege of purchasing other Museum publications at cost.

Sustaining Members will receive 1 members' admission ticket, 5 single admission tickets, 4 to members' lectures, the Bulletin, and all other Museum publications on application.

Special privileges will be extended to Patrons and Benefactors.

ART DEPARTMENT

Apart from the natural history collections which form the bulk of the Museum there is a considerable amount of miscellaneous ethnological, archaeological, and art material which

represents one of the later interests of Dr. Gabriel Manigault's curatorship. The arrangement of these collections was seriously disturbed by the conversion of Manigault Hall into a lecture room, and the lack of a curator has prevented their use for public benefit.

The Director is, therefore, pleased to announce the election of Professor N. W. Stephenson as Honorary Curator of Art. The collections in Manigault Hall are not at present open to the public from the necessity of its use as a work-room, but it is expected that space will be available in the new building for the exhibition of these collections and that the development of the department will be possible.

In the meantime, those who heard Professor Stephenson's recent lectures on "The Especial Value of Japanese Art" will be pleased to know that he is to give a series of three lectures, late in Lent, to members of the Museum, and also two detached lectures which will be free to the public. Professor Stephenson also expects to arrange a second exhibit of Japanese engravings early in the spring.

THE NATURAL HISTORY SOCIETY

At the December meeting of the Natural History Society, held in Manigault Hall, Thursday, Dec. 6, a number of visitors listened to descriptions by Mr. Sass and Mr. Weston of the birds found at this season of the year in the City or at the Navy Yard. A few days later some of the members of the Society visited the Navy Yard with Mr. Weston and found the bird life varied and abundant.

The Museum announces that it is ready to send out a competent guide with members of the Society, in parties of from two to five, for field study of birds. Any person may become

a member of the Society upon application to the Secretary, Mr. J. H. Taylor, of the College of Charleston, or to the Director of the Museum. There is an initiation fee of fifty cents and semi-annual dues of twenty five cents, in return for which members receive the Bulletin of the Museum.

A very satisfactory trial has been made in the field of the bird guide published by Mr. C. K. Reed, of Worcester, Mass., and copies will be placed on sale at the Museum at fifty cents apiece.

ON VISITING MUSEUMS.

The increasing number of teachers visiting the Museum with their classes has been noted with pleasure. In this connection the following paragraph, reprinted from *The Museum News*, of Brooklyn, N. Y., will be found to contain helpful suggestions.

It is a good thing to visit a museum; it is a better thing to visit it with some definite purpose. This applies more particularly to teachers with classes and to natural history collections. If even the chance visitor, wandering through a museum, does not get some new idea, the museum is probably at fault; if children accompanied by a teacher do not obtain some information from a visit to a museum, the teacher is probably at fault. It is well for a teacher to visit a museum herself before going there with a class, as she (this pronoun will include the great majority of teachers) will then have a much better idea than she otherwise would of why the children are going.

Occasionally a class may be seen marching decorously but

rapidly before the cases, rarely pausing long enough to read a label and unless the interest of the children is sufficiently aroused to bring them to the museum another time, they have not obtained the good from the visit they might have. On the other hand, a teacher should not attempt too much instruction; she should direct rather than lead, and if desired information is not to be gathered from specimen or label the teacher might ask about it, either in person or by letter.

Pay especial attention to one or two exhibits and then let the objects speak for themselves and do not tire the children in the effort to teach them too much. Let them master one or two ideas and remember that other days are coming.

NOTES FROM THE MUSEUM

The Museum is open to the public on Saturdays from 10 to 5 and on other week-days from 10 to 12 and 1 to 5. Children unaccompanied by an adult are admitted only on Saturdays.

The BULLETIN will be sent by mail to any address for twenty-five cents a year. The mailing list is undergoing revision and any who have failed to receive recent issues will be supplied on application to the editor.

Mr. F. W. Wamsley has come from the Marine Biological Laboratory at Woods Hole, Mass., to join the staff of the Museum as Assistant to the Director. Mr. Wamsley is a graduate of Brown University and has had valuable experience in the collection and preparation of zoological material. His immediate work will be the preparation of specifications for the re-

modelling of the Thomson Auditorium for the use of the Museum.

Professor Rea is just concluding his University Extension lectures on the History of Biology before Darwin. An arrangement will be made whereby members of the Museum will receive tickets to the remainder of the course, which treats of Darwinism and post-Darwinian problems.

The January issue of the BULLETIN will be devoted, as usual, to the annual report of the Director of the Museum.

The late appearance of the BULLETIN for December is due to the failure of City Council to ratify the contract concerning the new building on December 27th as expected. Since this failure was due to mere oversight and the pages of this issue were already in press, publication has been withheld until the formal ratification of the contract on January 8th.

BULLETIN
OF
THE CHARLESTON MUSEUM

EDITED BY
PAUL M. REA

REPORT OF THE DIRECTOR OF THE MUSEUM
FOR THE YEAR 1906

Volume III, Number 1

JANUARY, 1907.

The Charleston Museum

UNDER THE AUSPICES OF THE COLLEGE OF CHARLESTON

Director

PAUL M. REA

Assistant to the Director

F. W. WAMSLEY

Librarian

FRANCES JERVEY

Honorary Curators

WM. G. MAZYCK.....	<i>Conchology</i>
DANIEL S. MARTIN.....	<i>Geology</i>
ARTHUR T. WAYNE.....	<i>Ornithology</i>
NATHANIEL W. STEPHENSON.....	<i>Art</i>

Student Assistants

HENRY LAURENS	<i>Osteology</i>
FRANCIS M. WESTON, JR.....	<i>Ornithology</i>

THE CHARLESTON MUSEUM was in existence as early as 1798 under the auspices of the Charleston Library Society, was transferred to the Literary and Philosophical Society of South Carolina in 1815, and has been administered by the College of Charleston since 1850.

The Museum is dependent upon dues from members and private subscriptions for all permanent improvements, for increase of the collections, and for maintenance of its educational and scientific work.

The membership fees are:—

ANNUAL MEMBERS.....	\$ 10	PATRONS	\$ 500
SUSTAINING MEMBERS.....	25	BENEFACTORS	1000

The privileges of members include admission on pay days, tickets to member's lecture courses, and copies of museum publications.

The BULLETIN OF THE CHARLESTON MUSEUM is published monthly, from October to May by the Museum and is entered at the Post Office at Charleston, S. C., as second class matter.

BULLETIN

OF

THE CHARLESTON MUSEUM

Vol. 3 CHARLESTON, S. C., JANUARY, 1907 No. 1

REPORT OF THE DIRECTOR OF THE MUSEUM FOR THE YEAR 1906

The general revision of the Museum collections, begun in 1905, has been continued during the past year. It early became evident, however, that satisfactory results could not be obtained until larger quarters should be secured, with adequate storage cases and work rooms and more extensive and better lighted exhibition space. In February a movement was started to obtain for the use of the Museum the building known as the Thomson Auditorium, and, after many delays, satisfactory arrangements have been concluded with City Council for the lease of this building, as described in the December issue of the BULLETIN. When this movement for a new building was started all permanent improvements in the present building were discontinued and several exhibits were left incompletely or temporarily installed, and the latter part of the year has been devoted to the work of preparing the collections for transfer and installation in new quarters.

THE NEW BUILDING

The Thomson Auditorium is well adapted for the use of the Museum and will provide ample accommodation for all departments. The adoption of the name "THE CHARLESTON

MUSEUM" well expresses the intimate association between the Museum and the city in the past, and, with the generous support accorded by City Council, a new era of development and increased service to the public is opened. Its success depends now on a liberal financial support from the people at large. The Museum is dependent upon the contributions of members for all permanent improvements, for the increase of the collections, and for the maintenance of its educational and scientific work. The City Maintenance Appropriation will be barely sufficient to meet the fixed charges necessary to prevent deterioration of the collections. To provide a stable financial basis for the Museum a general endowment fund and special endowments for particular lines of work should be created in the near future.

HISTORY OF THE MUSEUM

The Director is desirous of accumulating and putting on record material for a history of the Museum and to this end he has printed in the BULLETIN, from time to time, such historical notes as he has been able to gather. These have shown that the Museum originated in collections maintained by the Charleston Library Society at least as early as 1798, a notebook having been found which records the specimens presented to the Museum from 1798 to 1808. It is not known whether the Museum was in existence earlier than 1798, but even so it is probably the oldest museum of general natural history in America, the only rival of which we are aware being the Harvard collection of minerals, which was begun in 1794.

In 1815 the Museum was transferred to the auspices of the newly organized Literary and Philosophical Society of South Carolina, which appointed Dr. Felix L'Herminier curator and for many years maintained the Museum in Chalmers Street. In 1850 interest in the Museum was stimulated by the meeting in Charleston of the American Association for

the Advancement of Science and by the work in the city of the elder Agasiz and the Museum was transferred to rooms set apart for its use by the College of Charleston, under whose auspices it has steadily grown to the present time.

THE AMERICAN ASSOCIATION OF MUSEUMS

The Director accepted an invitation to participate in the organization of the American Association of Museums in May. The convention was held in New York and included delegates from Museums throughout the United States, Canada, Hawaii and South America. The fact that the Charleston Museum was the only southern institution represented is in itself a demonstration of the unique position and wide field of influence of this museum.

The Director presented a paper at this meeting on the methods of filing bird records in this museum and on the bird work of the Natural History Society.

ADMINISTRATION

The Museum comprises at present the following departments:—Administration, Invertebrate Zoology (including conchology), Vertebrate Zoology, Geology (including mineralogy and invertebrate paleontology), Art, Library, Biological Survey, Public Instruction, and Publication.

The regular staff includes the Director, an Assistant to the Director, Librarian, Honorary Curators, and Student Assistants.

Only a part of the time of the librarian is employed at present but full time will be required when the new building is opened, both because of the growth of the library and because a public reading room will then be maintained.

Satisfactory arrangements have been made whereby students in the college who are doing advanced work in certain departments of the Museum may be appointed Student Assistants. In this way Mr. Henry Laurens is preparing descrip-

tive labels for the Manigault Osteological Collection and Mr. F. M. Weston, Jr., is continuing the work on birds begun by Mr. Fitzhugh Salley, who graduated in June.

Special assistants have been employed from time to time. Major P. P. Mazyck has prepared a series of bindings for weather maps and Mr. Sass, who has been associated with the Museum for several years, is engaged in the compilation of the records of specimens.

The honorary curators are the same as last year, with the addition of Professor N. W. Stephenson, who has been elected Honorary Curator of Art. Mr. Wayne, Honorary Curator of Birds, has given important assistance on technical questions in ornithology. Mr. W. G. Mazyck, Honorary Curator of Recent Shells, cheerfully brings to the care of this department the patience and skill necessary to restore order to long neglected and badly confused collections.

To Professor Daniel S. Martin the Museum is indebted not only for a most skilful revision of the geological department, of which he is the honorary curator, but for extensive and valuable donations of books and specimens and for an enthusiastic interest which has already been the means of securing for the Museum gifts from others and of increasing the public knowledge of and interest in the Museum. Professor Martin has been keenly interested in the movement for the new building and will have charge of the transfer and re-installation of the geological department.

RECORDS

One of the most serious faults of the Museum in the past has been the lack of proper records, for the value of scientific specimens is almost entirely dependent upon the data accompanying them. In my last report I emphasized the imperative need of putting in proper form the scanty information available regarding the material now in the Museum and of adopt-

ing a modern system of accession records for the future. For this purpose I have made an extensive examination of the methods of other museums and have devised a system at once simple, effective, and readily adaptable to all sorts of material.

Each specimen is given a specimen number, indelibly marked upon it, which is the key to the accession book, containing its business history, and to a card catalogue, containing its scientific record. In addition there is another card catalogue, alphabetically arranged, which shows how many specimens of each species are in the Museum, together with the location of each and its specimen number. Each label bears the number of its specimen and confusion of labels is easily remedied and in no way affects the museum records.

This system of records was put into actual use in the fall and the records of nearly one thousand birds have already been compiled by Mr. Sass. It is of the highest importance that this work should be brought up to date for all departments before any moving of specimens is undertaken.

Preparations have been made for relabeling several collections and this work will be continued as rapidly as funds permit.

ATTENDANCE

Some record of the attendance during the winter months has again been possible through the courtesy of Mr. Passailaigue, of the Consolidated Company, in loaning to the Museum a turnstile. It has been impossible to provide an attendant for the turnstile except on Saturdays and the record of visitors is therefore only approximate. In the seven months when the turnstile was in use 5,840 persons visited the Museum and the large number of excursionists during the summer probably brings the total for the year to over 10,000.

In the new building a regular door man will be necessary and then the number of visitors can be accurately kept.

ELLIOTT HERBARIUM

The only important botanical collection belonging to the Museum at present is the valuable herbarium of Stephen Elliott, which was sent to the Biltmore Herbarium in 1904 for repoisoning, repairs, and study. In my last annual report I stated my unwillingness to have such important material returned to the Museum until a suitable safe could be provided for its storage and protection from insects and fire. Such a safe was purchased early in the past year and affords ample room for both the Elliott Herbarium and the most important museum records.

In the course of an examination of material stored in the base of the College library an additional fascicle of the Elliott Herbarium was discovered, containing two type specimens and much other material in a fair state of preservation. This was also sent to Biltmore and in the fall the whole Elliott Herbarium, including the fascicles sent there during the curatorship of Dr. Ashley, was returned to the Museum and is now in the safe. A printed report embodying the results of the study of this herbarium at Biltmore was to have been prepared by Mr. Beadle but has been delayed by the pressure of other work.

It is desirable that an exhibit of shade and forest trees of this vicinity, showing sections of the wood and studies of the flowers, fruit, and foliage, as well as the distribution and economic importance, should be added to the Museum in the near future. Such an exhibit would be of public importance and the recent introduction of the study of botany into the public schools is an additional incentive to the development of the botanical side of the Museum. Many of the agricultural industries of this vicinity will also lend themselves easily to economic exhibits.

INVERTEBRATE ZOOLOGY

Preparations for the installation of a synoptical exhibit

of invertebrates were under way when the movement for a new building was inaugurated and it was then decided to keep this material in storage until it can be installed in the new quarters. The material for this exhibit has been added to by purchase and by collections made by the Director during the summer.

A preliminary revision of the conchological collections has been made by the honorary curator of the department, Mr. W. G. Mazyck. The condition of these collections would be hopeless but for the patience and skill of Mr. Mazyck and it is to be hoped that no part of the Museum will ever suffer such neglect in the future.

In April the Museum acquired the conchological collection of the late Dr. Edmund Ravenel, of Charleston. So many years have passed since this very valuable collection has had proper scientific care that much work will be required to determine its present value. This difficult task will be prosecuted by Mr. Mazyck, as rapidly as possible.

LOCAL SHELL COLLECTIONS

In the near future the Director hopes to prepare an exhibit of the land and marine shells found in the vicinity of Charleston, together with some biological account of the animals they represent. Mr. Mazyck has expressed his willingness to undertake this work as soon as the immediate needs of the systematic collections have been met.

MANIGAULT OSTEOLOGICAL COLLECTION

Early in the past year this admirable collection was installed in the gallery of Holmes Hall. Descriptive labels are now being prepared and the installation will be greatly improved in the new building.

ORNITHOLOGY

In connection with the work of the Natural History So-

ciety an exhibit has been temporarily installed in Agassiz Hall to illustrate the seasonal fluctuations in the character of the bird life of the coast region of South Carolina. It includes at present Permanent Residents and Winter Visitants. With the departure of the latter for their northern breeding grounds in the spring and the arrival of the Transient Visitants, which winter south of the United States and breed farther north, and of the Summer Residents, the exhibit is correspondingly changed, so that the entire bird life of the current season is always displayed. A bulletin of new arrivals is posted near the case and new labels for each specimen are in preparation, giving the range and local status of each of these birds.

The immediate need of this department is a study collection of skins, taken at all seasons of the year. The increasing interest in birds among teachers and pupils makes it important that the Museum should have such a study series and a beginning of this work will probably be made in the coming year.

The Museum should also possess a duplicate mounted series of our common birds, to be loaned to teachers who may wish to use them with their classes.

GEOLOGY

A preliminary revision of this department was made last winter by the honorary curator, Professor Daniel S. Martin, and this work will be continued during the winter and the collections prepared for removal. Several important additions have been made to this department through Professor Martin. He has, himself, presented to the Museum important collections in invertebrate paleontology and has deposited a set of crystallographic models and other specimens. He has also prepared for shipment to the Museum the greater part of his private collections, made during many years. In addition to these most generous gifts he has promised his entire geological library to the Museum. The

Museum is indebted to Professor Martin not only for these contributions but also for his services in interesting others in our work. Through Professor Martin, Mr. Henry Booth, of Poughkeepsie, N. Y., has presented to the Museum an extensive collection of Paleozoic fossils and a number of other gentlemen have expressed an intention of adding to our collections. Indeed, one of the strongest arguments for permanent financial support of the Museum is the readiness with which it is made the custodian of valuable scientific material. With permanent support there can be no doubt but that most valuable collections can be built up.

ART

The art collections which were the chief interest of Dr. Manigault's later years have been without a proper custodian since his death. Professor N. W. Stephenson was recently elected Honorary Curator of this department and will also assist in the work of the department of public instruction.

LIBRARY

Additional shelving was provided in the library and the classification and cataloguing of the books and pamphlets has been completed by the librarian, Miss Frances Jervey. The efficiency of the library has thus been greatly increased. The library seriously needs a public reading room and this will be provided in the new building. The full time of the librarian will then be required and much work must be done in analyzing government publications. The library is in serious need of funds for purchase of books and journals, for library furniture and for binding.

PUBLICATION

The BULLETIN has been published regularly during the year and has been the means both of diffusing a knowledge of the Museum and its work, and of bringing many valuable museum publications to the library in exchange.

An increasing need is felt of providing for the occasional publication of more extensive research papers and it is probable that such a series may be initiated in the coming year.

PUBLIC INSTRUCTION

As a part of the work of this department a number of lectures were given during the winter and spring to the general public. These free lectures have undoubtedly been of service to the community and have helped the Museum. It has long been a part of my plan, however, to provide organized courses of lectures on topics of general interest and the inauguration of a University Extension movement in the city seemed to afford an opportunity of undertaking such work. I therefore accepted an invitation to give such a course on Organic Evolution and Kindred Biological Problems on condition that it be given in the Museum. In this way better organized work has been possible than heretofore.

The equipment for public instruction has been improved by the purchase of additional lantern slides and the public reading room which will be provided in the new building will greatly increase the educational possibilities of the Museum.

THE NATURAL HISTORY SOCIETY

The Natural History Society is an important medium for the educational work of the Museum. It is at present working exclusively on birds but at some future time sections may be formed for the study of trees or other subjects. Members of the society are the chief contributors to the bird records of the Museum and the meetings of the society, together with the seasonal exhibit of local birds in the Museum, afford every opportunity for popular instruction regarding our bird life.

The Director is making special efforts to interest the general public, and especially teachers, in our local birds and is

desirous of increasing the membership of the Natural History Society in order that this important branch of the work may be better organized. Arrangements have been made to provide a competent guide to accompany small parties of members of the society on field trips for the study of birds.

BIOLOGICAL SURVEY

One of the most important duties of the Museum is the accumulation of accurate information regarding the natural resources of the vicinity of Charleston and for this purpose a biological survey has been planned, to be prosecuted as rapidly as funds permit. At present work has been undertaken in but one field. A bird record card has been devised and records of several observers have been filed for each month in the past year, showing the birds seen, together with notes on their habits and abundance. This work has been carried on in connection with the Natural History Society and the special exhibit of local birds.

It is very important that this biological survey should be extended to include marine collecting and for this purpose the Museum is desirous of obtaining a launch. This work would also afford an opportunity of extending the bird observations to include sea and shore birds, to which we have no means of access at present.

It is certain that accurate records of such a survey would be of scientific as well as local importance.

PAUL M. REA, *Director.*

NOTES FROM THE MUSEUM

Until the opening of the new building, the Museum will be open to the public on Saturdays from 10 to 5 and on other week days from 10 to 12 and 1 to 5. Children unaccompanied by an adult are admitted only on Saturdays.

The BULLETIN will be sent by mail to any address for twenty-five cents a year.

Several cases of failure to receive the BULLETIN have come to the attention of the editor. A recent revision of the mailing list should have corrected this trouble and any subscriber who now fails to receive the BULLETIN will confer a favor upon the Museum by notifying the editor at once.

The February meeting of the Natural History Society will be postponed to Thursday, February 14, on account of the mid-year examinations at the College. All persons interested in birds or the study of bird life are cordially invited to attend. Several members of the Society have recently taken advantage of the offer of the Museum to provide a competent guide for field trips. Participation in these excursions is limited to members of the Society but the qualifications for membership are simple—the sending of one's name to the Secretary, Mr. J. H. Taylor, of the College of Charleston, or to the Director of the Museum. There is an initiation fee of fifty cents and semi-annual dues of twenty-five cents, in return for which members receive the BULLETIN of the Museum.

BULLETIN
OF
THE CHARLESTON MUSEUM

EDITED BY
PAUL M. REA

THE OWLS OF CHARLESTON AND VICINITY
ACCESSIONS OF THE GEOLOGICAL DEPARTMENT
WORK OF THE NATURAL HISTORY SOCIETY
NOTES FROM THE MUSEUM

The Charleston Museum

UNDER THE AUSPICES OF THE COLLEGE OF CHARLESTON

Director

PAUL M. REA

Assistant to the Director

F. W. WAMSLEY

Librarian

FRANCES JERVEY

Honorary Curators

WM. G. MAZYCK.....*Conchology*
DANIEL S. MARTIN.....*Geology*
ARTHUR T. WAYNE.....*Ornithology*
NATHANIEL W. STEPHENSON.....*Art*

Student Assistants

HENRY LAURENS*Osteology*
FRANCIS M. WESTON, JR.....*Ornithology*

THE CHARLESTON MUSEUM was in existence as early as 1798 under the auspices of the Charleston Library Society, was transferred to the Literary and Philosophical Society of South Carolina in 1815, and has been administered by the College of Charleston since 1850.

The Museum is dependent upon dues from members and private subscriptions for all permanent improvements, for increase of the collections, and for maintenance of its educational and scientific work.

The membership fees are:—

ANNUAL MEMBERS.....	\$ 10	PATRONS	\$ 500
SUSTAINING MEMBERS.....	25	BENEFACTORS	1000

The privileges of members include admission on pay days, tickets to member's lecture courses, and copies of museum publications.

The BULLETIN OF THE CHARLESTON MUSEUM is published monthly, from October to May, by the Museum and is entered at the Post Office at Charleston, S. C., as second class matter.

BULLETIN

OF

THE CHARLESTON MUSEUM

Vol. 3 CHARLESTON, S. C., FEBRUARY, 1907 No. 2

LOCAL FAUNA

THE OWLS OF CHARLESTON AND VICINITY

The live owl exhibit has been the attraction of the month at the Museum. A pair of Great Horned Owls and a Barred Owl, captured on a plantation near Florence, S. C., by means of a steel trap, placed on the top of a long pole, were presented to the Museum by Mrs. Henry S. Holmes. Master Samuel G. Stoney, Jr. brought in a Florida Screech Owl which had come down the chimney of the plantation house, "Medway," on Cooper River and a Barn Owl, caught in the tower of the Cathedral, on Broad St., was presented to the Museum by the sisters in charge of the Orphan House. This owl, unfortunately, lived only a few days in confinement.

These birds, by reason of their strange appearance and ludicrous manners, have been a source of unfailing interest to the younger portion of our visitors. They exhibit noteworthy individuality in their reception of such unwonted attention. The Screech Owl sits with half-closed eyes, a mere, indifferent fluff of feathers. The Barred Owl gazes calmly out of wide-open, mild, blue-black eyes and betrays excitement only by ruffling of feathers and winking of the large upper lids and filmy nictitating membrane.

The Great Horned Owls, however, indignantly resent atten-

tion by incessant hissing and loud snapping of the mandibles, while the Barn Owl made his annoyance even more manifest by raising his wings and, after prolonged hissing, depressing his head and vigorously wagging it from side to side. The descriptive labels, prepared for this exhibit, have been eagerly read and a brief talk upon the habits of these birds was attended by fifty people.

The following account is intended as a guide to a study of the owls of Charleston and vicinity.

Owls belong to the order *RAPTORES* or Birds of Prey. They are distributed widely over the whole world, about 20 species inhabiting our own country. Although their reputation has been none of the best, investigations carried on by Dr. Fisher for the Department of Agriculture have proved that most of these birds are valuable allies of the farmers and should be protected by law. They are carnivorous, hunting by night, and thus the small army of destructive rodents, which, by reason of their own nocturnal habits, escape day-time enemies, hawks etc., are kept in check by these night prowlers.

The owls are admirably adapted for hunting. Their hearing is exceedingly acute, their vision keen at night and their claws and bill hooked and sharp. Their very soft, downy feathers render the flight practically noiseless, while their sober coloring—the entire absence of gay plumes—makes concealment easy.

The prey, unless too large, is swallowed whole,—skin, bones, and feathers, fur or hair all at one mouthful. Twenty-four hours later, the indigestible matter, rolled up into a large, round pellet, is ejected from the mouth. It is by examination and identification of the remains found in these pellets that the expert zoölogist has concluded that the depredations committed in the poultry-yard are more than offset by the number of destructive mammals and insects destroyed.

The favorite localities for the home of the owl are the

dark recesses of the woodlands, where a hollow limb is selected for the nest or a deserted hawk's or crow's nest pre-empted. Some species, however, prefer rock crevices and sometimes church steeples or even dark lofts of barns or out-buildings.

The calls of these birds are in great measure accountable for the superstitious fear with which they are often regarded. They vary from a long drawn-out hoot or tremulous wail to a blood-curdling shriek, which, when heard from the depths of the forest, carries a hair-raising suggestion of some awful tragedy being enacted therein.

The four owls commonly found about Charleston are all Permanent Residents. Of these, the **Barn Owl**, *Strix prat-incola* BONAP., is the only one abundant within the city limits and our church steeples are its favorite dwelling-place. These are most peculiar looking birds about the color of "scorched linen" and they are known in Florida as the "Monkey-faced Owls" because of the odd, triangular facial disk, which with the half-closed eyes, closely resembles that of a monkey.

These birds are unfamiliar neighbors, since they are almost never seen in the day-time. They are most beneficial friends however, for they rarely descend upon our poultry-yards but are exceedingly fond of rats and mice. In the cotton fields they are an invaluable ally, for they feed extensively upon the cotton rat.

So good a reputation, however, can scarcely be given to the **Great Horned Owl**, *Bubo virginianus* (GMEL.), which chooses its home in the woodlands. This fierce creature, second to but one in size, is the lord high executioner of all its tribe. Unfortunately it is extremely fond of young turkeys and guinea-fowls. Only an appetite for rabbits and rats redeems its reputation in those parts of the country where these mammals are a pest.

If the planters on some of our sea islands would take measures to safeguard their poultry at night and leave this

owl free to hunt, it might prove an effective aid in protecting the tender garden truck from the depredations of rabbits.

The Great Horned Owl is easily identified from its large size, great yellow eyes and the prominent ear tufts which are not ears at all but merely tufts of elongated feathers.

The **Florida Barred Owl** or **Hoot Owl**, *Syrnium varium alleni* (RIDGW.), next in size to the Great Horned Owl, is also a lover of the woods and is very abundant in the extensive swamps of our coast region. Its dark brown coloring, round head devoid of ear tufts and mild, blue-black eyes make identification easy. Chickens, small birds, rats and mice make up the larger part of its food list, but Dr. Fisher concludes that "if a fair balance must be struck, this owl is, on the whole, beneficial and should be placed on the list of birds to be protected."

The little **Florida Screech Owl**, *Megascops asio floridanus* (RIDGW.), easily identified by reason of its small size and prominent ear tufts, is the last and least of our abundant owl neighbors. It has long been a puzzle to naturalists because of its freaky dress,—some individuals appearing in plumage of rusty red, some in mottled gray and black, without regard to age, sex or season.

In the country this little owl is often a troublesome neighbor for it is likely to take up its abode near the house and send up its unearthly, tremulous, shivering wail directly outside our windows. Out of 255 stomachs examined by Dr. Fisher, 1 contained poultry, 100 contained insects, 91 contained mice, 38 contained other birds, etc. The fondness for song-birds thus exhibited, seems to warrant the feeling that the number of screech owls might be limited, although their undoubted service in destroying field mice must also be taken into serious consideration.

Beside the four common permanent residents thus enumerated, we have occasional visitors among other species of owls.

The **Snowy Owl**, *nyctea nyctea* (LINN.), is a resident of the Arctic regions but occasionally strays far southward. Many years ago a specimen was shot from the top of a flagstaff outside the Charleston Hotel.

The **Long-Eared Owl**, *Asio wilsonianus* (LESS.), is a rare winter resident, our honorary curator of birds, Mr. Arthur T. Wayne, having taken two specimens on March 16, 1896 and one specimen on January 16, 1906.

The **Short-Eared Owl**, *Asio accipitrinus* (PALL.), occurs in winter on some coast islands and the **Saw-whet Owl**, *Cryptoglaux acadica* (GMEL.), is also a very rare winter visitor, one having been taken at Mt. Pleasant by Mr. Wayne on Dec. 24, 1885.

The Museum is desirous of adding to its study collection of local birds and will be glad to receive live owls or dead birds in good condition which may be captured in the city or its vicinity.

ACCESSIONS OF THE GEOLOGICAL DEPARTMENT

The department has been able to secure during the past year a notable amount of valuable material, particularly in paleontology, in which branch the specimens already received are probably twice the number possessed by the Museum before, to say nothing of more that are promised or on their way. The most important single gift was that of Mr. Henry Booth, of Poughkeepsie, N. Y., who became warmly interested in the Museum through the accounts given him by Dr. Martin, and offered his entire collection as a gift, even assuming himself the cost of shipment. This noble donation alone has doubled what the Museum previously possessed of invertebrate fossils. It is especially rich in the following groups: Silurian fossils of Ohio, Illinois, and Wisconsin; Lower Helderberg, Oriskany and Portage of Central and

Western New York; coal-plants from Pennsylvania, and particularly those from the noted locality at Mazon Creek, Illinois; and Tertiary plants from the Miocene beds at Florissant, Colorado.

Next in importance is a fine series illustrating the Miocene fossils of Maryland (Chesapeake formation), selected within the past few weeks by Dr. Martin, from the large duplicate collections of the Maryland Academy of Sciences, at Baltimore. These were placed at his disposal most freely by the President of the Academy, Dr. P. R. Uhler, and every facility was afforded for selecting a representative series.

With these may be mentioned a small but choice collection of Tertiary fossils from France and Belgium, received in exchange for American species from M. Jean Miguel, of Hérault, France. It is the hope and purpose of the Honorary Curator to place in the Museum a full representative exhibit of the Tertiary fossils of the Southern States, with those of Europe for comparison. These sets just mentioned, with some that the Museum already has, are the first instalments of this proposed exhibit, and much additional material is promised from several other sources.

A number of characteristic fossils of the Hamilton group of Western New York, have been obtained very recently from the Rev. H. H. Thomas, of Columbia, S. C., who has resided long and collected extensively in the former district. These were secured by Dr. Martin partly by gift and partly by exchange, and are to be supplemented by more at a later day.

Another exchange was made, especially for Triassic plants, with the Museum of Wesleyan University at Middletown, Conn. These, though not numerous or showy, are of much value, in that the Museum had previously no representatives of the Triassic flora.

A very valuable set of Cretaceous plants was obtained, also by exchange, from the geological museum of the New York

Botanical Garden. These have not yet arrived, however. The same is the case with a large representative series of Eocene fossils from various localities in the Southern States, offered as a gift, by the liberality of the Rev. Dr. L. T. Chamberlain, of New York City.

In the department of mineralogy, an exchange has been arranged with the University of South Carolina, at Columbia, whereby the latter is to receive some thirty species of duplicate birds from this museum, giving in return about a hundred mineral specimens, mostly duplicates from the collection of the late Dr. Gibbes of this city. The birds have been carefully selected by the Honorary Curator, Mr. Wayne, and the minerals by Dr. Martin, in conjunction with Prof. Twitchell, who holds the chair of geology at Columbia. This exchange is one of advantage to both institutions, and it is hoped may be only the first in a series of similar transactions of friendly co-operation.

The Honorary Curator has sent on from New York the greater part of his extensive collections, gathered during forty years, in mineralogy and geology, to be deposited in this museum. A considerable part of this valuable material, he designs to present as a gift, and has already done so with portions of it. But until the new building is ready for occupancy, it is not deemed wise to unpack more than is actually needed for special use; and these collections will remain for the present in their boxes, to be described at a subsequent date.

WORK OF THE NATURAL HISTORY SOCIETY

The February meeting of the Natural History Society was attended by a large number of visitors who listened to a talk by the vice-president, Mrs. Paul M. Rea, on The Owls of

Charleston and Vicinity, illustrated by both living and mounted specimens.

In addition to the regular meetings on the first Thursday in each month the executive committee has decided to hold mid-monthly meetings, on the second Wednesday after each regular monthly meeting, for discussion of the more technical work of the society. All who are desirous of developing a field knowledge of birds will find the mid-monthly meetings especially helpful.

The next regular meeting will be held in Manigault Hall, Thursday, March 7, at 4:30 P. M. and will be devoted to a popular discussion, by Mr. H. R. Sass, of the peculiar habit of migration among birds, illustrated by common local species. All interested are invited to be present.

Copies of the Bird Guide, by C. A. Reed, are on sale at the Museum at fifty cents each. This little book has been adopted by the society as a handbook for field use and is of a convenient size to carry in the pocket.

NOTES FROM THE MUSEUM

The zoology class from the Memminger Normal School recently visited the Museum with its teacher and the lecture room was placed at their disposal for a demonstration of Coelenterates. The Museum is gratified to be of service to teachers and the new building will afford facilities for more extensive co-operation.

Professor Martin's many friends in Charleston will be glad to hear that he has come to spend three months at the Museum. His excellent work for his department while away is described on another page.

BULLETIN
OF
THE CHARLESTON MUSEUM

EDITED BY
PAUL M. REA

THE RELATION OF THE MUSEUM TO THE SCHOOLS

The Charleston Museum

UNDER THE AUSPICES OF THE COLLEGE OF CHARLESTON

Director

PAUL M. REA

Assistant to the Director

F. W. WAMSLEY

Librarian

FRANCES JERVEY

Honorary Curators

WM. G. MAZYCK.....	<i>Conchology</i>
DANIEL S. MARTIN.....	<i>Geology</i>
ARTHUR T. WAYNE.....	<i>Ornithology</i>
NATHANIEL W. STEPHENSON.....	<i>Art</i>

Student Assistants

HENRY LAURENS	<i>Osteology</i>
FRANCIS M. WESTON, JR.....	<i>Ornithology</i>

THE CHARLESTON MUSEUM was in existence as early as 1798 under the auspices of the Charleston Library Society, was transferred to the Literary and Philosophical Society of South Carolina in 1815, and has been administered by the College of Charleston since 1850.

The Museum is dependent upon dues from members and private subscriptions for all permanent improvements, for increase of the collections, and for maintenance of its educational and scientific work.

The membership fees are:—

ANNUAL MEMBERS.....	\$ 10	PATRONS	\$ 500
SUSTAINING MEMBERS.....	25	BENEFACTORS	1000

The privileges of members include admission on pay days, tickets to member's lecture courses, and copies of museum publications.

The BULLETIN OF THE CHARLESTON MUSEUM is published monthly, from October to May, by the Museum and is entered at the Post Office at Charleston, S. C., as second class matter.

BULLETIN

OF

THE CHARLESTON MUSEUM

Vol. 3 CHARLESTON, S. C., MARCH, 1907 No. 3

THE RELATION OF THE MUSEUM TO THE SCHOOLS*

Perhaps no one thing is more clearly indicative of the new epoch of activity upon which the Museum entered two years ago than the request which has come from your County Teachers' Association to be told "How the Schools can use the Museum."

The Museum takes especial pleasure, therefore, in outlining for you its ideal of the relation of the Public Museum to the public schools in a community of our size, and in announcing such definite lines of helpfulness as its present resources enable it to offer.

I believe I am right in saying that no limit to the educational possibilities inherent in the museum idea has yet occurred to the mind of the modern museum worker. The museum is as yet, however, an almost unrecognized factor in our educational system. Only the handful of men engaged in the pioneer work of development realize its tremendous possibilities.

Most of us still cling to our old-fashioned notion of a museum, or, perhaps more correctly, to our notion of an old-fashioned museum as a sort of "stuffed animal house". We

*An address delivered before the Charleston County Teachers Association, by Mrs. Paul M. Rea, March 9th, 1907.

consider it a very respectable place of amusement for children. They are always interested in the mummy and beg to be shown the skeleton of the man of whom so many hair-raising stories are told. The idea of a museum, however, as an institution co-ordinate with the public library in its sphere of public usefulness, to be as eagerly and frequently visited and used—that idea has probably never occurred to most of us and is, in fact, still dormant in the minds of most communities.

The museums themselves are, for the most part, to blame for this. It is only too easy to understand why people have not felt repaid for their trouble in coming to visit our own Museum, for the collections have scarcely been in a condition to interest, much less *instruct*, the general public. To the scientist, museums are admittedly of interest and use, but few are yet willing to grant that they have any real, practical everyday value for the rest of us.

The reason for this misapprehension is not far to seek. A museum has been fitly compared to an iceberg, in that it is eight-ninths concealed below the surface. A broad foundation of thorough scientific investigation may not be of immediate interest to the general public, yet it is essential to any museum worthy of the name, and upon it depends the nature and quality of the superstructure which is arranged for the benefit of the public, viz.—the exhibition collections, together with those aids to their enjoyment and understanding, of which I shall later speak. Concerning this portion of the institution, teachers, as leaders and guides of one great class of the community for whose benefit it is especially designed, should be well informed.

The exhibition collections are, first of all, not to be considered as a collection of objects merely, but as a collection of ideas, fully illustrated by objects. These are planned, arranged and labelled wholly with a view to their educational possibilities. Take for illustration, the small group of mount-

ed beavers in our own collections. The mere specimens themselves, with a common and scientific name attached do not convey sufficient interesting or useful information to the ordinary visitor to warrant the investment of public or private money in their accumulation for exhibition purposes. If these animals were mounted amid accessories reproducing their natural surroundings, if they were accompanied by pictures and models illustrating their home life and habits, by maps showing their distribution and notes of local occurrence, and, most important of all, by labels, setting forth in clear, simple language, information such as might be conveyed by a curator at one's elbow, then this group would have a definite educational value which casual visitors would appreciate and student or teacher could ill afford to be without.

Such an arrangement of the exhibition collections as I have indicated involves an immense amount of thought, care and attention to detail into the consideration of which I will not attempt to lead you. No museum in the country will ever dare to announce that its exhibition collections realize their educational ideal. Therefore, when our new building is opened to the public, let it not be understood that the collections are at once in a condition to meet the needs of the public and the schools. It is hoped, however, that a *start* will have been made in that direction to be prosecuted as far and as fast as the funds of the Museum and the size of the staff will allow.

A suggestion of the working plans of the Museum for the exhibition collections in their relation to the work of the schools may be given at this time. In the department of zoology, there should be, first of all, a representation of all the animals, from invertebrates to mammals, found, either wild or domesticated, in this section of the country. This representation should include specimens, models, pictures, diagrams and maps, illustrating the homes, habits, and distribution of these animals, and would be accompanied by labels giving

necessary information in simple language, printed in clear, readable type. A second series, arranged in similar fashion, should comprise types illustrative of the whole animal kingdom, in order that the evolution from the lowest and simplest to the highest and most complex forms might be clearly indicated.

The principles of the anatomy and physiology of animals, as, for instance, the form and use of the skeleton as a supporting structure in various animal bodies, the form, composition and mechanical adjustment of the muscles which enable movements of the body, or the interesting structures and processes involved in the nutrition of the animal body—all these and more would form the subject of a third instructive exhibit. Equally important would be a so-called bionomic series, illustrating the adaption of animals to the conditions of their environment in such matters as the methods used in the pursuit and capture of prey, means of protection against enemies both offensive and defensive, or devices employed in the successful care and rearing of young.

Finally, certain industries connected with the animal resources of our section of the country should be explained and illustrated, as, for instance, the food fishes of our coast, together with usual methods of capture or the facts and statistics associated with that nefarious plunder of the Egret which is such a blot upon the fair name of some of our Southern states. An observation hive of Honey-bees might have a place in this exhibit, and properly, perhaps, the life-history and habits of the insect pests which infest our homes and gardens, with effective means of combating them indicated.

Such a series of exhibits would be supplementary to and illustrative of the school courses, and would provide far better illustration for work in geography, elementary science and so-called "physiology" than those found between the covers of text-books which are usually the only sources available.

The collections in Botany, Geology and Mineralogy will be developed and arranged along similar lines, prominence being given always to the natural resources of our own locality. It is with these that the children should first become thoroughly familiar. Our field happens to be particularly wide and rich. The extent and variety of the timber-lands, the growing of tea, rice, cotton and garden-truck, the occurrence of phosphate rock, workable clays, and various building materials, with all the industries arising therefrom, place practically no limit to the educational exhibits which this Museum will consider it a duty to arrange.

To meet the needs of special times and seasons, special exhibits can be arranged in co-operation with the school work. Suggestive titles for such exhibits are, "Native Spring Wild Flowers," "Poisonous Plants of our Coast Region," or "Birds of our City," "Birds of the Current Season," etc.

With such a conception of the relation of the Museum to the work of the schools as I have already outlined, an exhibition of living forms is not incongruous. Among the first possibilities of the life room would be salt and fresh water aquaria, in which the smaller forms of life can be observed and studied under natural conditions. Frogs, lizards, snakes and those animals which are content and thrive in captivity may also be cared for, and thus opportunity given to young students for direct observation of habits.

The impossibility of an attempt to duplicate such a series of instructive exhibits in all the schools of the city is at once obvious, and yet the disadvantages associated with a single central museum containing illustrations for school lessons have, perhaps, occurred to you. To obviate these in part, a series of small loan collections in convenient portable cases can be made up from duplicate material in the possession of the Museum and sent out to schools desiring them for a period of time, to be replaced by other collections at the re-

quest of the teacher. These collections should contain beside the specimens and labels, brief notes giving necessary information and a bibliography of the subject treated for the benefit of the teacher. If possible, a special instructor should be in charge of these collections, visit the schools and direct their management, devise means for making them thoroughly useful and, if necessary, conduct classes for either teachers or children. The territory thus supplied by the central museum, with illustrations and objective material for work in geography or elementary science would be limited only by the funds and resources of the Museum.

In the Museum library and reading room, both teachers and children will find valuable aid along the lines of school work. Books without specimens give imperfect ideas of life and things as many of you can testify from your own experience. But books and pictures *with* specimens make a complete working outfit for scholar or teacher. The Museum library supplements the school text-books in a way that the public library can not do, since it can not properly specialize in any one or two departments. The range of books, beginning at simple nature readers for little children would ascend through the scale of attractive, helpful books, adapted to the varying needs of children of school age to the more technical works which furnish much needed aid to the busy teacher.

Much, of course, depends upon the adaptability of the librarian to her work and the opportunities she finds for interesting and helping visitors to her department. Arranging book-lists to accompany exhibits and loan collections, hunting up material for work on special topics which the teacher or student is too unpracticed or too busy to do for himself—these are but two suggestions for the pleasant burden of helpfulness which must rest upon the shoulders of the museum librarian.

Turning from books to nature, the Museum encounters an-

other opportunity for the extension of its sphere of usefulness toward the public schools. Agassiz said "the pupil studies nature in the school-room and when he goes out of doors, he can not find her!" Field excursions are conceded in these days to be a necessary accompaniment of school work in geography or elementary science. Yet field excursions are in themselves difficult to manage and become well nigh impossible when added to the duties of the already over-worked teacher. The Museum, however, in the personnel of its staff, in the material resources at its command, and in knowledge of the country over which its collections are made, should possess the elements necessary for the successful management of classes in outdoor work.

Arrangements should be made at the Museum for the comfort and convenience of the classes visiting the building accompanied by their teacher. A lecture room or classroom may be provided on request and the specimens needed arranged therein. If it is desirable, a demonstrator or lecturer from the Museum can be in attendance, or the class and its teacher may be left undisturbed to do their work as they please. Free lecture courses, illustrative of the studies pursued in the schools may be given at the Museum at times suited to the convenience of teachers and pupils. In brief, the Museum should stand ready to carry out any reasonable request from the schools for aid in their work to the extent of that portion of its resources which may justly be employed in this direction.

And, finally, as a means of keeping in touch with the teachers, of spreading information concerning special exhibits, loan collections or work going on at the Museum of particular interest to the schools, and of announcing the dates and subjects for lectures, a Bulletin, published by the Museum should be mailed to the principals for distribution among the teachers and children who apply for it.

In turning now to a definite statement of what the Charleston Museum is at present able to do for the schools, if it seems as if we had offered you bread and were giving you a stone, please remember the difficulties under which we labor. Two years is a very short time in which to awake to activity a sleeping institution, buried so long in dust and oblivion that deterioration of valuable material had already set in. The difficult task of convincing the public, upon whose support we must rely, that a museum is not a luxury but an important educational institution and a valuable asset of any progressive community is only begun. The appeal for funds, the struggle for a suitable building and the preparation of collections long neglected for a condition of usefulness are matters which of necessity have absorbed and will continue to absorb the greater part of the time and resources at the command of the staff. Yet there are a number of opportunities for co-operation, even under the difficult conditions of the present, and these will be greatly enlarged next year, when it is hoped the transfer of the collections to the new building may be made.

Classes accompanied by the teacher are welcome at the Museum at any time and upon request, a lecture-room will be provided, specimens arranged for observation and study, and a demonstrator, if desired, can be present. In the absence of descriptive labels, the Museum will be glad to furnish a guide for any teacher or party of school children who may visit the collection seeking especial information, if the request be preferred in season for necessary arrangements to be made.

As a means of directing the attention of the children themselves to the helpfulness of a real study of the collections in connection with their school work, the Museum is prepared to offer a series of prizes for the best essays upon such exhibits at the Museum as have a direct bearing upon any given point in the regular course of study.

A request from the schools for lectures upon any given topic

or topics will be complied with, if time and money for expenses incurred are available at the moment.

The library and card catalogue are now in condition for use by teachers, and aid in looking up material will cheerfully be granted. The advantages of library and reading room to both teachers and pupils will be greatly enhanced upon removal to the new building, where a librarian will be in constant attendance. Opportunity for field work and supplementary nature study is now given through the Natural History Society. On the first Thursday afternoon of each month at five o'clock, the Society meets in Manigault Hall for discussion of some topic relating to the bird-life of our coast region. This discussion is not technical, and all teachers and children interested in birds are cordially invited to attend. Membership in the Society involves no obligations of any sort but the payment of an initiation fee of fifty cents and semi-annual dues of twenty-five cents and is open to all. It includes the privilege of calling upon the Museum to furnish a guide on field excursions for bird-study and of receiving the monthly issue of the BULLETIN.

When the preparation-rooms and work-rooms of the new building are ready for use, substantial aid in the collection, preservation and preparation of material for class-room use can be given to the school or teachers desiring it.

Finally in addition to these suggestions on the part of the Museum the Director will welcome any and all suggestions coming from the schools—from commissioners, principals, and teachers as individuals or as collective units. Co-operation must be the key-note of the relation of our Museum to our schools and a statement of the need of the teacher or of the school, followed by consultation between the interested parties will be productive of some good results, even though the Museum is able only, at present, to approximate its ideal of helpfulness.

THE NATURAL HISTORY SOCIETY

The regular monthly meeting of the Natural History Society was held in Manigault Hall, Thursday, March 7th. The feature of the meeting was an interesting talk by Mr. Herbert R. Sass, on "Migration of Birds," illustrated by specimens from the Museum.

At the mid-monthly meeting the president, Mr. F. M. Weston, Jr. demonstrated the migrants which had already been reported and then continued his description of the species which may be expected to arrive in April. The secretary, Mr. J. H. Taylor, reported the results of an examination of the records of the Society concerning species of doubtful local status. Special attention will be paid to these species in the future.

The new plan of devoting the regular monthly meeting to subjects of wide popular interest in relation to birds and of holding a mid-monthly meeting for more technical discussion has met with general approval. The regular April meeting, as announced on another page, will include an account by Mr. Herbert R. Sass of the "Habits of the Brown Pelican", illustrated with lantern slides. This subject was suggested by the presentation to the Museum of a Brown Pelican taken at the Drayton Station bridge over Ashley River, by Mr. M. W. Rivers, of Summerville, on March 25th.

No one who desires a field acquaintance with our common birds should miss the mid-monthly meeting on April 17th, with its helpful demonstration of specimens from the Museum. The migration season is now at its height and every field excursion adds to the record of arrivals on the bulletin, near the seasonal exhibit.

NOTES FROM THE MUSEUM

Until the opening of the new building, the Museum will be open to the public on Saturdays from 10 to 5 and on other week days from 10 to 12 and 1 to 5. Children unaccompanied by an adult are admitted only on Saturdays.

The BULLETIN will be sent by mail to any address for twenty-five cents a year. Members of the Museum or of the Natural History Society are entitled to receive the BULLETIN free.

The pupils of one of the public schools have become better acquainted with several common local birds through specimens loaned by the Museum for use as drawing models.

The Director takes pleasure in reporting gratifying progress in the preparation of specifications for the new building. Valuable suggestions were received from a recent visit to the National Museum, which freely places its experience at the service of other museums, and also through the courtesy of Messrs. Hornblower and Marshall, architects of the new building for the National Museum, who have taken much interest in our work. The interest in the Charleston Museum which is shown throughout the country should stimulate the enthusiastic support of our own community.

The exhibit of live owls at the Museum will be continued for a short time.

Members lecture course tickets will be honored for admission to Professor Rea's University Extension lectures on Organic Evolution and Kindred Biological Problems.

An interesting Holothurian, or Sea-cucumber, was brought to the Museum recently by Mr. I. Blank. The specimen was

taken by a fisherman on the Blackfish Bank in 15 fathoms of water and has been preserved for the Museum collection.

The Bird Guide, published by C. K. Reed, which is used by the Natural History Society as a field handbook, has been annotated by our honorary curator of birds, Mr. Arthur T. Wayne, to show the status of the birds of our coast region. This book is intended by its author to serve as a guide to all the birds east of the Rocky Mountains, and the value of the annotations his not only in eliminating all the birds not occurring in this region but also in indicating the seasons of the year in which our local birds may be seen and their comparative abundance. Since the annotated copy of this field guide will be of very great service to beginners in bird study the Museum has made arrangements to furnish duplicate copies of each part at \$1.00 each. Part I treats the Water and Game Birds; Part II the Land Birds. The price of each part without the annotations is, 50 cents.

BULLETIN
OF
THE CHARLESTON MUSEUM

EDITED BY
PAUL M. REA

A VISIT TO THE GRAVE OF THOMAS WALTER
EXHIBIT OF JAPANESE ENGRAVINGS

Volume III, Number 4

APRIL, 1907

The Charleston Museum

UNDER THE AUSPICES OF THE COLLEGE OF CHARLESTON

Director

PAUL M. REA

Assistants to the Director

F. W. WAMSLEY

HERBERT R. SASS

Librarian

FRANCES JERVEY

Honorary Curators

WM. G. MAZYCK.....*Conchology*

DANIEL S. MARTIN.....*Geology*

ARTHUR T. WAYNE.....*Ornithology*

NATHANIEL W. STEPHENSON.....*Art*

Student Assistants

HENRY LAURENS.....*Osteology*

FRANCIS M. WESTON, JR.....*Ornithology*

THE CHARLESTON MUSEUM was in existence as early as 1798 under the auspices of the Charleston Library Society, was transferred to the Literary and Philosophical Society of South Carolina in 1815, and has been administered by the College since 1850.

The Museum is dependent upon dues from members and private subscriptions for all permanent improvements, for increase of the collections, and for maintenance of its educational and scientific work.

The membership fees are:—

ANNUAL MEMBERS.....\$ 10

PATRONS.....\$ 500

SUSTAINING MEMBERS..... 25

BENEFACTORS..... 1000

The privileges of members include admission on pay days, tickets to members' lecture courses, and copies of Museum publications.

THE BULLETIN OF THE CHARLESTON MUSEUM is published monthly, from October to May, by the Museum and is entered at the Post Office at Charleston, S. C., as second class matter.

BULLETIN

OF

THE CHARLESTON MUSEUM

VOL. 3 CHARLESTON, S. C., APRIL, 1907 No. 4

A VISIT TO THE GRAVE OF THOMAS WALTER

BY EZRA BRAINERD

While planning a recent journey through the coastal region of the Southern Atlantic States, I conceived a strong desire to visit the home and burial-place of Thomas Walter, one of the many distinguished men whose names adorn the early history of South Carolina. My motive was twofold—first, a sentimental respect for the memory of an enthusiastic student of nature, who was the first to publish, in his *Flora Caroliniana*, a fairly complete account of the flowering plants of a definite region in eastern North America; and secondly, a desire to identify if possible, certain plants first named by Walter, but suspected of being misunderstood by subsequent students of botany.

My desire to make this pilgrimage was stimulated by a brief account in the *Proceedings of the Elliott Society** of Charleston, of a similar visit by Mr. H. W. Ravenel fifty years ago. There was a tinge of romance in his description of Walter's solitary grave in a grove of Chinese "tallow-trees" that the botanist had himself planted, and in the statement on the memorial tablet, that at his own request he was buried in the garden, where once were cultivated most of the thousand plants described in his *Flora*.

*Vol. I, pp. 53-54.

I had at the start more or less difficulty in locating the plantation of Walter. The preface of his book is dated, "CAROLINÆ MERIDIALIS, ad Ripas Fluvii Santee, 30 Dec. 1787." But it was a long stretch from the ocean to where "the Wateree and Congaree unite to form the Santee," as the source of this river was mysteriously indicated in the geography of my boyhood. Dr. Small, the learned author of the new Flora of the Southern States, kindly helped me out by showing me a map of the old Santee Canal in Drayton's "View of South Carolina," (published 1802). On this map Walter's place is noted near the northern end of the Canal. On reaching Charleston all further needed information was courteously furnished me at the rooms of the Historical Society on Broad St.

On the evening of March 27th I found myself in most comfortable quarters at Mrs. Kroopman's Inn at Eutawville, with all arrangements made for the drive of fifteen miles and back on the morrow. It proved to be a most delightful trip, aside from the matters of interest that awaited me at my destination; and I trust the readers of the BULLETIN will pardon the enthusiasm of a northerner, accustomed all his life in the month of March to icy fields and blustering winds, who for the first time finds himself, instead, in the genial air of summer, surrounded by a bewildering display of strange plants and birds, traveling along a great highway built before railroads were dreamed of, through a famous battlefield of the Revolutionary War, and in view of that wonder of Nature, the broad limpid boiling waters of the Eutaw Springs. I was told that "the old Charleston road," that I followed for about ten miles, was built at great expense over one hundred and fifty years ago, and extended across the whole width of the lowlands, from the coast to Columbia. Much of the way it was closely lined by large native trees—oaks, pines, cedars, sour gums—apparently self-sown; and mingled with these were luxuriant flowering shrubs in all their glory,—the dog-

wood, the wild hawthorn, the Cherokee rose, the leafless azalea; and nearer the wheel-track appeared at intervals the humbler flowers of spring, the pink oxalis, the may-apple, the fire-pink, and violets of various sorts.

The day was excessively hot, and we deferred our return till the cool of evening. Before us was the red western sky seen through the great tall trunks of Georgia pines; behind us a little later rose the full moon with its cool white light; and later still the weird flames of forest fires flared up on either side the highway, burning up the dry pitch in the old pockets that had been cut in pines by the turpentine-makers, or cremating entirely the trunks of trees that were dead. It is hard to understand how these fires, even in time of drouth, do so little damage to the forests of the southern pine-belt; while in northern forests they prove so destructive.

The site of the Walter place on the banks of the Santee is about two miles north of the Charleston highway, and was reached through a muddy and tortuous forest-road. We should have had great difficulty in tracing it and in finding the grave, had we not had the good fortune to fall in with a colored man who was familiar with the region, and had, while getting out railway ties, accidentally stumbled upon the tomb-stone; for all traces of Walter's house, or of any out-buildings that might have once stood in the neighborhood, have wholly disappeared. The grounds and the garden have quite reverted to the original forest. I looked in vain for the tallow-trees that Ravenel described as standing about the grave in 1856. I searched for other plants which might be regarded as vestiges of the botanical garden that had flourished there one hundred and twenty years before, and observed at opposite ends of the grave two large willow-oaks, (*Quercus Phellos*), that had every indication of having been planted there. Looking about diligently for other horticultural signs, I noticed the strong perfume of the sweet violet. Ah, I thought, Walter had growing here the violet of his English home, and it has be-

come naturalized here as in other places in the South. But careful search revealed no English violet; instead, I saw some feet away several small odd-looking appletrees with bright-pink blossoms. They proved to be a species of the native crab-apple, (*Pyrus angustifolia*), whose exquisite fragrance and rich coloring were new to me. The trees were doubtless brought there by Walter.

It was unpleasant to learn that only about ten years ago the thousands of acres belonging to the Walter plantation had passed into the hands of a lumber company; and to find that the stately Georgia pines that once stood about Walter's house and garden had only four years ago been cut. The former owner of the property, Mr. Ezekiel Porcher, we were told, had held it for over half a century, and being without family had sold it only in extreme old age. We are sure that the lumber company, had they known the historic interest of the spot, would have spared a few acres about the grave of this pioneer of American Botany. Even yet something may be done; for less than a mile away we witnessed the uncanny sight of a locomotive, on extemporized rails, carrying off carloads of logs and ties; while hundreds of acres around showed the ravages of fire, here in southern pineries, as elsewhere, far more destructive when fed by the dry refuse of an old chopping.

The memorial of Thomas Walter is a large slab of white crystalline marble, about six feet long, two feet eight inches wide, and two inches thick. It lies on the ground in a nearly horizontal position, and bears the inscription on the opposite page.

NOTE:—It is a source of gratification to the Director of the Museum to be able to announce that steps have already been taken looking to the protection and preservation of the site of this grave and early botanical garden, by the Museum in co-operation with the present owners of the land.

In Memory
OF
THOMAS WALTER

A native of Hampshire in England
and many years a resident in this
State. He died in the beginning of
the year 1788. Ætatis cir. 48 ann.

To a mind liberally endowed by
nature and refined by a liberal
education he added a taste for
the study of Natural History
and in the department of
Botany science is much
indebted to his labours.

At his desire he was buried on
this spot once the garden in
which were cultivated most
of the Plants of his

FLORA CAROLINIANA.

From motives of filial affection
his only surviving Children
ANN and MARY
have placed this memorial.

EXHIBIT OF JAPANESE ENGRAVINGS

Through the kindness of Miss Anne H. Dyer of New Orleans, the Art Department of the Museum has been enabled to make a special exhibit of Japanese prints. Among them were a number of triptychs. Perhaps the most striking—though certainly not the finest—was by Hiroshigi representing the “Girls Annual Procession.” The peculiarity of this print lay in the fact that the three pieces, composing it, were joined not in the usual way, at the sides, but at the ends. The result was a long narrow frieze, ten inches high by more than forty in length. Of the finer triptychs, one by Yeizan deserves especial notice. It is more distinctive, less derivative, than is most of the work of that talented but too facile master who seems, generally, to have been unable to refrain from imitating the last fine thing he had seen. Two triptychs from the vigorous hand of Toyokuni are especially fine. One of these, in a fine chord of autumnal color beautifully diversified by the black robes of its women, comes near Toyokuni’s high water mark—which, we must all admit, in spite of the depths into which he sometimes fell, was gloriously high. A very remarkable triptych, by Hiroshigi, deals with the famous whirlpool of Naruto. This picture shows a marvellous sense of space and light over sunlit sea, of distance dim with lustre, and far mountains shining like opals out of a haze of brightness.

However, remarkable as are the triple prints, the strength of the collection is undoubtedly in its single-sheet Hiroshigi’s. Among these is that one which is generally ranked first among all his single-sheet designs—the “Shono” print of the great series illustrating the Tokaido road. In this print the tree tops of a bamboo grove, smitten suddenly by a rain-storm, are made to compose upon the face of a piece of paper with such magical effect that the beholder is made aware, as by the dropping of a mask, of what unspeakable wonders of

artistic arrangement are concealed by nature in an apparent disorder.

The series of eight prints illustrative of Lake Biwa—the far-famed “Biwa Series”—are sometimes placed with eight others, known as “Yedo Kinko Hakkie,” at the apex of Hiroshigi’s endeavor. Both sets are extremely rare. The present exhibit contains the former set, entire, as well as several of the latter. Of extreme interest, also, is a series of quarter-sheets which show Hiroshigi in the terms of a miniaturist. Though slight, these prints are very charming, quite equal artistically to all except the best of the larger ones.

It were impossible even to indicate, in this brief space, the range and loveliness of the exhibit. At least one more plate, however, must be noted. An exquisite piece of color shows much of the delicate subtlety of that marvellous master Harunobu.

The entire collection is for sale and inquiries may be addressed to the Art Department, Charleston Museum. The usual charge made by dealers for handling prints is 33 $\frac{1}{3}$ %, and as the Museum does not accept this profit, persons ordering through the Museum will have the benefit of the discount.

NOTES FROM THE MUSEUM

A live Wild Cat has been placed on exhibition in the Museum near the mounted skins of other members of the cat family. This specimen was taken on the Huguelet Plantation on Cooper River and was presented by the North State Lumber Company.

The regular April meeting of the Natural History Society was devoted to a talk by Mr. H. R. Sass on "The Habits of the Brown Pelican," illustrated with lantern slides. The skin of a young Brown Pelican was exhibited and the relative advantage of mounted and unmounted specimens discussed. This pelican was taken March 24th, at the Drayton Station Bridge on Ashley River, and was presented to the Museum by Mr. W. M. Rivers of Summerville.

With the approach of the warm season the lecturing activity of the Museum will be suspended till autumn. Professor Rea concluded his University Extension course with a discussion of DeVries' mutation-theory of evolution and a review of present tendencies in biological work.

Professor Martin's lecture of April 18th on "The Scientific Basis of Fairy Lore," aroused much interest. He reviewed the evidence of the former existence of dwarf races in northern and western Europe and, after emphasizing the remarkable agreement between the legendary attributes of the fairies and the characteristics of the living dwarfs of northern and equatorial Africa, suggested the strong probability that European fairy lore is based upon traditions of prehistoric dwarf races.

The loan exhibit of Japanese Engravings, described on the previous page, was opened with a lecture on "The Oriental Point of View in Art," by the honorary curator, Professor N. W. Stephenson, in Manigault Hall, Wednesday afternoon, April 18th.

MUSEUM CALENDAR FOR APRIL

APRIL 1st, MONDAY. Regular weekly lecture of the University Extension course on Organic Evolution, by PROFESSOR REA, in Manigault Hall at 8-15 p. m. Subject: **"The Evolution of Human Society."** *Admission by subscribers' ticket or Museum members' ticket. Single admission thirty-five cents.*

APRIL 4th, THURSDAY. Regular monthly meeting of the Natural History Society, in Manigault Hall at five o'clock. MR. HERBERT R. SASS will give an account of the **"Habits of the Brown Pelican,"** illustrated with lantern slides. *A general invitation to be present is extended to all who are interested.*

APRIL 8th, MONDAY. University Extension lecture by PROFESSOR REA, in Manigault Hall at 8-15 p. m. Subject: **"Weismann and Theories of Heredity."**

APRIL 15th, MONDAY. University Extension lecture by PROFESSOR REA, in Manigault Hall at 8-15 p. m. Subject: **"Mendel's Law of Hybrid Inheritance."**

APRIL 17th, WEDNESDAY. Regular mid-monthly meeting of the Natural History Society, in Manigault Hall at 4-30 p. m. Subject: **"Further Description of Spring and Summer Birds."** *Open to members and to any others who desire a field acquaintance with our common birds.*

APRIL 18th, THURSDAY. Public lecture by PROFESSOR DANIEL S. MARTIN, in Manigault Hall at 8-15 p. m. Subject: **"The Scientific Basis of Fairy Lore."** *Admission free.*

APRIL 22nd, MONDAY. University Extension lecture by PROFESSOR REA, in Manigault Hall at 8-15 p. m. Subject: **"DeVries and Evolution by Mutation."**



BULLETIN
OF
THE CHARLESTON MUSEUM

EDITED BY
PAUL M. REA

**SYNOPSIS OF THE BIRD RECORDS OF THE NATURAL
HISTORY SOCIETY FOR THE YEAR 1906**
NOTES FROM THE MUSEUM

The Charleston Museum

UNDER THE AUSPICES OF THE COLLEGE OF CHARLESTON

Director

PAUL M. REA

Assistants to the Director

F. W. WAMSLEY

HERBERT R. SASS

Librarian

FRANCES JERVEY

Honorary Curators

WM. G. MAZYCK.....*Conchology*

DANIEL S. MARTIN.....*Geology*

ARTHUR T. WAYNE.....*Ornithology*

NATHANIEL W. STEPHENSON.....*Art*

Student Assistants

HENRY LAURENS.....*Osteology*

FRANCIS M. WESTON, JR.....*Ornithology*

THE CHARLESTON MUSEUM was in existence as early as 1798 under the auspices of the Charleston Library Society, was transferred to the Literary and Philosophical Society of South Carolina in 1815, and has been administered by the College since 1850.

The Museum is dependent upon dues from members and private subscriptions for all permanent improvements, for increase of the collections, and for maintenance of its educational and scientific work.

The membership fees are:—

ANNUAL MEMBERS.....\$ 10

PATRONS.....\$ 500

SUSTAINING MEMBERS..... 25

BENEFACTORS..... 1000

The privileges of members include admission on pay days, tickets to members' lecture courses, and copies of Museum publications.

THE BULLETIN OF THE CHARLESTON MUSEUM is published monthly, from October to May, by the Museum and is entered at the Post Office at Charleston, S. C., as second class matter.

BULLETIN

OF

THE CHARLESTON MUSEUM

LIBRARY
NEW YORK
BOT. AND
GARDEN

VOL. 3

CHARLESTON, S. C., MAY, 1907

No. 5

SYNOPSIS OF THE BIRD RECORDS OF THE NATURAL HISTORY SOCIETY FOR THE YEAR 1906

The Natural History Society is organized under the auspices of the Charleston Museum as a means of encouraging the study of the fauna and flora of the Coast Region of South Carolina. At present the society consists of but one section, devoted to the study of birds. The records of this work are kept on cards especially designed for the purpose¹ and filed in the Museum at the end of each month.

We publish below a synopsis of the records made in the first year of the society's work by several students of the College of Charleston, with occasional reports from Mr. Arthur T. Wayne, honorary curator of birds in the Museum and other observers.

This synopsis is not intended as a complete list of the birds of the Coast Region of South Carolina. The inexperience of many of the observers accounts for the errors of identification as indicated in the footnotes, while the irregularity of field work and the difficulty of reaching the haunts of the water birds explain, to a large extent, the incompleteness of the list. It is printed chiefly as a guide for the future work of the members of the Natural History Society, there being no accurate published list of the birds of this region.

1 See Bulletin of the College of Charleston Museum, Vol. I, No. 4, pp. 34-36.

I. Permanent Residents.—Birds which occur here throughout the year.

LIST 1. PERMANENT RESIDENTS REPORTED FREQUENTLY EVERY MONTH IN THE YEAR.

<i>Water Birds</i>	
Great Blue Heron or "Poor Jo"	Red-winged Blackbird
Wayne's Clapper Rail	Boat-tailed Grackle or "Jackdaw"
or "Marsh Hen"	Cardinal
<i>Land Birds</i>	
Turkey Buzzard	Loggerhead Shrike
Black Vulture	Mockingbird
Southern Downy Woodpecker	Brown Thrasher
Blue Jay	Carolina Wren
Crow ¹	Tufted Titmouse
Chewink ²	Carolina Chickadee

These birds are found in or about the City at all times of the year and are so abundant that they should be familiar to every child. Parents and teachers will find this list an admirable basis for first lessons in bird study. To it might be added the Bob-white, Carolina Dove, and Kingfisher. (See List 2).

LIST 2. PERMANENT RESIDENTS REPORTED SOMEWHAT LESS FREQUENTLY THAN THOSE IN LIST 1.

<i>Water Birds</i>	
Little Blue Heron or "Blue Crane" ³	
<i>Land Birds</i>	
Bob-white ⁴	White-Eyed Vireo
Carolina Dove ⁴	Yellow-throated Warbler
Cooper's or "Chicken" Hawk ⁵	Pine Warbler
Kingfisher ⁴	Long-billed Marsh Wren ⁸
Flicker or Yellowhammer	Blue-gray Gnatcatcher ⁵
Red-headed Woodpecker ⁴	Bluebird

1 No distinction made between American Crow and Fish Crow.

2 No distinction made between Red-Eyed Chewink (Winter Visitant) and White-Eyed Chewink (Permanent Resident).

3 Not reported Nov.—Feb. incl. Winters on Sea Islands.

4 Not reported Nov.—Feb. incl.

5 Not reported Oct.—Jan. incl.

6 Not reported May—Sept. incl.

7 Reported every month but one. These birds properly belong in the preceding list.

8 Since this species is classed by Mr. A. T. Wayne as a Winter Visitant, but has been reported abundant throughout the Summer, there may be confusion with some other form.

LIST 3. PERMANENT RESIDENTS REPORTED STILL LESS FREQUENTLY
THAN THOSE IN LIST 2.

Bald Eagle	Red-bellied Woodpecker
Sparrow Hawk	Chipping Sparrow
Southern Hairy Woodpecker	Field Sparrow
Pileated Woodpecker	Florida White-breasted Nuthatch

None of these birds were reported in the summer months. It remains to be determined whether this is chiefly due to the small number of observers in the field or to scarcity of the birds.

LIST 4. PERMANENT RESIDENTS REPORTED ONLY OCCASIONALLY
DURING THE YEAR.

Water Birds

Wood or Summer Duck	American Oystercatcher or
Wood Ibis or "Gannet"	"Willet"

Great Bittern

Land Birds

Louisiana Heron	Woodcock
Black-crowned Night Heron	Wild Turkey
or "Indian Pullet"	Ground Dove
Florida Gallinule	Florida Barred Owl
Sanderling	Red-cockaded Woodpecker
Willet	Cowbird
Spotted Sandpiper	Southern Yellow-throat ¹
	Brown-headed Nuthatch

II. Winter Visitants.—Birds which come from their northern breeding grounds to winter here.

LIST 1. WINTER VISITANTS FREQUENTLY REPORTED.

<i>Water Birds</i>	Departure Spring of 1906	Arrival Fall of 1906
Horned Grebe or "Diver"	Mar. 25	Oct. 28
Loon	Apr. 23	Nov. 2
Herring Gull	Apr. 12	Dec. 9
Hooded Merganser	Mar. 11	Dec. 26
Mallard Duck	Feb. 19	Dec. 15
Scaup Duck or Black-head ²	Apr. 19	Dec. 16
Clapper Rail or "Marsh Hen" ³	—	—

¹ Abundance of this form uncertain since no distinction was made between it and Northern Yellow-throat during migration period of the latter.

² No distinction made between American and Lesser Scaup.

³ No distinction made between the Clapper Rail (Winter Visitant) and Wayne's Clapper Rail (Permanent Resident).

<i>Land Birds</i>	Departure Spring of 1906	Arrival Fall of 1906
Marsh Hawk	Mar. 31	Sept. 8
Sharp-Shinned Hawk	Apr. 8	Sept. 8
Yellow-bellied Sapsucker	Mar. 12	Oct. 28
Phoebe	Mar. 17	Sept. 8
Meadowlark	Apr. 15	Oct. 14
White-throated Sparrow	Apr. 26	Oct. 27
Song Sparrow	Apr. 13	Oct. 14
Cedar Waxwing	May 1	Jan. 28
Myrtle Warbler	Apr. 28	Oct. 10
Catbird	Mar. 17	Sept. 18
Ruby-crowned Kinglet	Apr. 14	Oct. 21
Hermit Thrush	Apr. 8	Oct. 6

For the benefit of teachers it may be stated that during the winter months some of these birds are as abundant in and about the City as the first list of Permanent Residents, viz.—the Scaup or Blackhead Duck, very common in the harbor, Colonial Lake, etc.; Clapper Rail or “Marsh Hen,” shot by thousands in the marshes; Myrtle Warbler, as common outside the city limits as the English Sparrow within; Catbird and Cedar Waxwing in the City and Meadow Lark in the fields.

LIST 2. WINTER VISITANTS SOMEWHAT LESS FREQUENTLY REPORTED
THAN THOSE IN LIST 1.

	Departure Spring of 1906	Arrival Fall of 1906
Killdeer Plover or “Cheweeke”	Mar. 17	Nov. 4
American Goldfinch	Feb. 22	Nov. 3
Vesper Sparrow	Mar. 25	Nov. 4
Junco	Mar. 12	Nov. 25
Titlark	Mar. 25	Nov. 5
Brown Creeper	Feb. 18	Oct. 29
Golden-crowned Kinglet	Mar. 25	Oct. 27
Robin	Apr. 15	Dec. 23

LIST 3. WINTER VISITANTS REPORTED ONLY OCCASIONALLY.

Water Birds

Ring-billed Gull
Laughing Gull
Bonaparte's Gull
Black Duck
Pintail Duck
Canvasback Duck
Ruddy Duck
American Coot or
"Blue Peter"

Land Birds

Red-tailed Hawk or
"Hen-hawk"
Rusty Blackbird
Pine Siskin ¹
Savanna Sparrow
Tree Swallow
House Wren
Short-billed Marsh Wren
Red-breasted Nuthatch

III. Summer Residents.—Birds which come from their southern winter homes to breed here, returning in the fall.

LIST 1. SUMMER RESIDENTS FREQUENTLY REPORTED.

Water Birds

Green Heron or "Skeow"

Arrival 1906

Departure 1906

Apr. 5

Oct. 27

Land Birds

Fish Hawk

Mar. 3

Oct. 25

*Yellow-billed Cuckoo or
"Rain-crow"

Apr. 26

Oct. 8

*Chimney Swift

Mar. 28

Oct. 28

*Ruby-throated Hummingbird

June 21

Sept. 24

*Kingbird or "Beebird"

Apr. 10

Oct. 4

*Crested Flycatcher

Apr. 13

Sept. 18

Wood Pewee

May 20

Sept. 18

*Orchard Oriole

Apr. 13

Sept. 18

*Nonpareil

Mar. 11

Nov. 4

*Summer Tanager

Apr. 13

Sept. 18

*Purple Martin

Mar. 5

Oct. 21

Red-Eyed Vireo

Apr. 13

Oct. 23

Parula Warbler

Mar. 17

Oct. 8

*Yellow Warbler

Apr. 21

Sept. 27

For the benefit of teachers it may again be stated that the birds marked thus (*) are common in the city during the summer months.

¹ *Fide* Dr. Robert Wilson.

LIST 2. SUMMER RESIDENTS REPORTED ONLY OCCASIONALLY.

Water Birds

Least Tern
Black Skimmer
Brown Pelican
Least Bittern
Wilson's Plover
Swallow-tailed Kite

Land Birds

Chuck Will's Widow
Night Hawk or "Bull Bat"
Yellow-throated Vireo
Swainson's Warbler
Prairie Warbler
Yellow-breasted Chat
Hooded Warbler
Wood Thrush

IV. Transient Visitants.—Birds which pass through here, spring and fall, on the way between their southern winter homes and their northern breeding grounds.

LIST 1. TRANSIENT VISITANTS REPORTED.

Water Birds

Black Tern
Bartramian Sandpiper
Hudsonian Curlew

Spring Migration

Mar. 11
Apr. 7

Fall Migration

Aug. 3-Sept. 18

Land Birds

Bobolink or Ricebird

May 13

Sept. 8-Oct. 14

Barn Swallow

Apr. 14-May 20

Aug. 10-Oct. 11

Bank Swallow¹

Mar. 5-June 13

Aug. 7-Oct. 28

Black and White Warbler

Aug. 11-Dec. 1

Worm Eating Warbler

Sept. 12

Black-throated Blue Warbler

May 12

Oct. 5-28

Oven Bird

Oct. 28

Northern Yellow-throat²

?

?

Redstart

Aug. 19-Oct. 27

The deficiencies of the first year's work are especially apparent in the records of Transient Visitants but records already filed for the spring of 1907 show a decided improvement.

¹ Possibly confused with Rough-Winged Swallow (Permanent Resident).

² Migration dates uncertain because no distinction was made between this form and Southern Yellow-throat.

NOTES FROM THE MUSEUM

One of the grammar school teachers recently brought her class to the Museum to see Australian animals in connection with the study of the geography of Australia. Birds and animals characteristic of that part of the world were brought into the lectureroom and with the additional assistance of lantern slides Professor Rea explained to the class some of the principles of animal distribution. The Museum hopes to be of service to other teachers and classes in similar ways.

Professor F. W. Putnam, head of the Peabody Museum at Harvard and of the Department of Anthropology at the University of California, recently visited the Museum and spent several days examining and revising the anthropological collection. Among other rare and valuable material this collection includes the oldest specimens known to be in the Museum, especially a native helmet from the Sandwich Islands and other articles presented in 1798¹. Another valuable specimen is a mummied human head obtained from the Mundrucus Indians of the River Tapajos by Lieut. Herndon, Commander of the United States Expedition to explore the River Amazon, and presented to the Museum in 1854. "These are the heads of their [the Mundrucus] enemies, the Mahuc's of the same district, which the Mundrucus preserve and keep in their houses as a sort of 'Fetish' or charm. Whenever a Mundrucus goes out to work his little plantation of tobacco, plantains, maize, etc., he puts one of these heads on a pole, and sticks the pole in the earth near where he is at work, as a protection against his enemies and evil spirits."²

At the regular mid-monthly meeting of the Natural History Society, held in Manigault Hall, May 15th, the following officers were elected for the summer term; President, Mr. H. R. Sass; Vice-president, Miss Mabel Pollitzer; Secretary, Mr. J. H. Taylor; Treasurer, Mr. J. W. Willson. Mrs. Rea then

1 See Bull. Coll. Chas. Mus., Vol. 2, No. 6 (Oct. 1906), p. 49.

2 Proc. Ell. Soc., Vol. 1, p. 14.

submitted a synopsis of the bird work of the Society for the year 1906. This synopsis is printed in the present issue of the BULLETIN and should prove a valuable guide for field work.

The Museum will be represented by the Director at the second annual meeting of the American Association of Museums, to be held at the Carnegie Museum in Pittsburg, June 4, 5, and 6. Professor Rea will read a paper on Museum Records.

With this issue the BULLETIN takes leave of its readers till October. Professor Rea will visit many northern museums during the summer and will plan the equipment of our new building. During July and August he will be on the instruction staff of the Marine Biological Laboratory at Woods Hole, Mass. Mr. Wamsley will supervise the conversion of the Auditorium into a museum building and Mr. Sass will bring the library and specimen records up to date in preparation for moving in the fall. Professor Martin, who has spent three months in the tedious but extremely important work of completing the records of the geological department, has returned to his home in Brooklyn, N. Y. Before coming down next year he hopes to obtain material for a contemplated exhibit of the mineralogy of the Southern Appalachians.

NOTE:—Mr. Arthur T. Wayne has kindly called our attention to an error on page 36 of the April BULLETIN. The name of the recent owner of the Walter plantation should read Mr. William Mazyck Porcher, instead of Mr. Ezekiel Porcher, as printed.—Ed.

BULLETIN
OF
THE CHARLESTON MUSEUM

EDITED BY
PAUL M. REA

HISTORY OF THE MUSEUM PREVIOUS TO 1798
THE NATURAL HISTORY SOCIETY
ORNITHOLOGICAL NOTES
NOTES FROM THE MUSEUM

The Charleston Museum

UNDER THE AUSPICES OF THE COLLEGE OF CHARLESTON

Director

PAUL M. REA

Assistants

F. W. WAMSLEY

HERBERT R. SASS

Librarian

Honorary Curators

WM. G. MAZYCK.....	Conchology
DANIEL S. MARTIN.....	Geology
ARTHUR T. WAYNE.....	Ornithology
NATHANIEL W. STEPHENSON.....	Art

Student Assistants

HENRY LAURENS	Zoology
J. WIRRON WILLSON.....	Ornithology

THE CHARLESTON MUSEUM was in existence as early as 1777 under the auspices of the Charleston Library Society, was transferred to the Literary and Philosophical Society of South Carolina in 1815, to the Medical School in 1843, and to the College of Charleston in 1850. In 1907 a building was provided by the City and the name changed to The Charleston Museum.

The Museum is dependent upon dues from members and private subscriptions for all permanent improvements, for increase of the collections, and for maintenance of its educational and scientific work.

The membership fees are:—

ANNUAL MEMBERS.....	\$ 10	PATRONS.....	\$ 500
SUSTAINING MEMBERS....	25	BENEFACTORS.....	1000

The privileges of members include admission on pay days, tickets to members' lecture courses, and copies of Museum publications.

THE BULLETIN OF THE CHARLESTON MUSEUM is published monthly, from October to May, by the Museum and is entered at the Post Office at Charleston, S. C., as second class matter.

BULLETIN

OF

THE CHARLESTON MUSEUM

VOL. 3 CHARLESTON, S. C., OCTOBER, 1907 No. 6

HISTORY OF THE MUSEUM

THE PERIOD PREVIOUS TO 1798*

BY WILLIAM G. MAZYCK

During the war, while Charleston was under fire from the Federal batteries, Professor F. S. Holmes, the then zealous and enthusiastic curator of the Museum of the College of Charleston, removed many of the more valuable specimens belonging to the Museum, together with its records, to his farm in Edgefield County, where his family were refugees, and where they were stored, with his own books, papers and specimens, in one of his barns, which, most unfortunately, was burned by a marauding band of negroes, just after the cessation of hostilities. The burning of the records was, of course, most deplorable, and for many years I have endeavored to repair the loss by searching every available source of information, and have succeeded in gathering the facts detailed below.

In 1865, and for several years after, I was librarian of the Charleston Library Society, and, while looking over a mass

*This, the first of a series of articles by Mr. Mazyck, extends the known history of the Museum by more than twenty years and establishes it as the oldest museum in America, beyond question. The period from 1798 to 1815, including the earliest accession list extant, was discussed by the Editor in the BULLETIN for October, 1906, (Vol. 2, No. 6), and the period from 1815 to 1819 by Miss Eola Willis in the BULLETIN for April, 1906, (Vol. 2, No. 4). Mr. Mazyck's investigation will be continued in the next two issues of the BULLETIN.—EDITOR.

of rubbish in a closet, I discovered a small manuscript memorandum book containing, among other items of more or less interest, this important and most valuable entry: "Articles for the Museum, presented 5th June, 1798, by Capt. William Hall." This little volume I recently brought to the attention of Professor Rea, and after a prolonged search of the records of the Library Society, it was found, and a transcript of this entry, and those of its several succeeding pages, was published in the October, 1906, number of this "BULLETIN," (Vol. 2, No. 6). This is doubtless one of the oldest, if not indeed the most ancient, accession list in existence, so far, at least, as our American museums are concerned. With this date as a clue, I have diligently followed the trail backwards until the records have been successfully established as far back *positively*, as 1777, and most probably several years earlier.

In "The South Carolina and American General Gazette" of January 29, 1778, there is a remarkably full account of the very disastrous fire which had laid waste the greater part of this city a few days before, in which this paragraph appears:

"The Charles Town Library Society's valuable collection of books, instruments and apparatus for astronomical and philosophical observations and experiments, etc. etc., is almost entirely lost."

Dr. David Ramsay, a member of the Society, whose name appears among the members of its executive committee, a circumstance which insures his complete familiarity with its affairs and property, amplifies this statement in this extremely interesting and most important note on page 379, Vol. 2, of his "History of South Carolina," (Charleston, 1809).

"On the 17th January, 1778, a very extensive fire took place in Charleston, when this Library, containing between six and seven thousand volumes, comprising a valuable collection of ancient authors, with paintings, prints, a pair of

elegant globes, mathematical and other instruments, *and many specimens of natural history*, was almost totally destroyed."

The words which I have emphasized taken alone, might not be entitled to much weight in this discussion, but in connection with the entries in the invaluable little memorandum book, in which gifts to "The Museum" are given equal prominence with books purchased for or given to the Library, fixes, beyond controversy, the fact that this beginning of the Charleston Museum antedates the next oldest record by *at least eight years*. "The first public museum was that founded in Philadelphia, in 1785, by Charles Willson Peale, the bones of a mammoth and a stuffed paddlefish forming its nucleus." (G. Brown Goode, Report U. S. Nat. Museum, 1897, pt. 2, p. 403).

Unfortunately, the minute book of the Library Society prior to March 15, 1815, cannot be found, but the minutes of its [Executive] Committee are extant, and as early as "Wednesday, December 12, 1764, the Committee proceeded to the room presented to the Society by Mr. Manigault, in order to see in what forwardness the same was for the receipt of the books, &ca." Just what the "&ca" consisted of the reader must determine for himself. When, however, it is recalled that as early as January 17, 1778, the Library owned "many specimens of natural history," it is reasonable to conclude that the collection was the outcome of several years' labor, especially as the public mind was fully occupied with the strenuous work of the Revolution and the years immediately preceding it. Scant time, indeed, must there have been in this city or state for the indulgence of scientific activity in the period between 1774 and 1777; it is, therefore, by no means an unwarranted conclusion that, "the Committee" included in its ideas of "forwardness" necessary provision for the accomodation not only of the books but also of "The Museum."

LOCAL FAUNA

CITY BIRD LIFE

In November, 1906, the BULLETIN published a list of the birds observed by Mr. H. R. Sass, in his garden on Legare street. The list at that time included 90 species. During the eleven months which have elapsed since the publication of the list, a number of new records have been made, bringing the total number of birds observed, up to 106 species exclusive of the English sparrow. These additions are given below.

In connection with Mr. Sass's list of garden birds, the list which we publish this month of birds observed by a few members of the Charleston Natural History Society on the College of Charleston campus should interest all students of local bird-life. Although the campus list contains a much smaller number of species than Mr. Sass's list, it furnishes a truer indication of the capabilities of the city in general as a place for bird study. The location of Mr. Sass's garden renders it peculiarly attractive to birds—in the south-western part of the city and practically bordering the Ashley River. The campus, on the other hand, is situated in the heart of the city far from both rivers, and, although containing more large trees than the average city garden, shares with the latter the disadvantage of being entirely surrounded by houses and noisy streets. The campus list, therefore, affords a better idea of what birds may be seen by the average city dweller than does Mr. Sass's list.

It should be noted, moreover, that, although the campus list has already attained to a considerable length, it will certainly grow rapidly for some time to come, since at present the observations on which it is based cover a period of less than two years.

The following species are especially noteworthy, since they are seldom seen in the city:—Red-headed woodpecker,

chuck-will's-widow, blue jay, black-poll warbler, ovenbird, tufted titmouse, and wood thrush. In fact, so far as the Museum is aware, the chuck-will's-widow and the wood thrush have never before been observed in the city. A pair of blue jays which nested and reared their young on the campus during the past spring and summer furnish the only known instance of the breeding of this species in the city.

ADDITIONS TO MR. SASS'S GARDEN LIST

Wood Ibis.—A bird seen flying over years ago (date unknown)
I now know was a wood ibis.

Louisiana Huron?—Two herons, almost certainly this species, seen
July 21, 1907.

Wilson's Snipe?—A small flock of shore birds probably snipe seen
September 15, 1907.

Pigeon Hawk.—One observed Oct. 9, 1907 devouring a small bird,
probably a mocking bird.

Wood Pewee.—Seen October 20 and 21, 1907.

Boat Tail Grackle.—One seen passing over September 1, 1907.

Purple Finch.—Seen and heard singing March 8 and 12, 1907.

Vesper Sparrow.—A small flock observed March 10, 1907.

Field Sparrow.—One seen April 22, 1907.

Fox Sparrow.—One seen January 6, 1907.

Black-poll Warbler.—A male seen and heard singing May 13, 14,
and 16, 1907.

Prairie Warbler.—One seen and heard singing April 18, 1907: two
seen September 1, 1907.

Yellow-breasted Chat.—One seen October 10, 1907.

Hooded Warbler.—Observed April 20, Aug. 26 and Sept. 13, 1907.

House Wren.—Observed October 21, 22, and 24, 1907.

Wilson's Thrush.—One seen September 7, 1907.

CAMPUS LIST

1. Black Tern
2. Green Heron
3. Common Dove
4. Turkey Buzzard

5. Black Vulture
6. Sharp-shinned Hawk
7. Fish Hawk
8. Yellow-billed Cuckoo

- | | |
|--------------------------|-----------------------------|
| 9. Red-headed Woodpecker | 24. Red-eyed Vireo |
| 10. Flicker | 25. White-eyed Vireo |
| 11. Chuck-will's-widow | 26. Black and white Warbler |
| 12. Chimney Swift | 27. Parula Warbler |
| 13. Kingbird | 28. Summer Warbler |
| 14. Crested Flycatcher | 29. Myrtle Warbler |
| 15. Blue Jay | 30. Black-poll Warbler |
| 16. Crow or Fish Crow | 31. Ovenbird |
| 17. Orchard Oriole | 32. Southern Yellowthroat? |
| 18. American Goldfinch | 33. American Redstart |
| 19. Song Sparrow | 34. Mockingbird |
| 20. Cardinal | 35. Tufted Titmouse |
| 21. Nonpareil | 36. Golden-crowned Kinglet |
| 22. Purple Martin | 37. Wood Thrush |
| 23. Cedar Waxwing | 38. American Robin |

ORNITHOLOGICAL NOTES

On October 17, while collecting birds for the Museum, I was fortunate enough to secure a specimen¹ of **Bewick's Wren**, *Thryomanes bewickii* (AUD.), a species which had never before been taken on the South Carolina Coast. The bird was taken in pine woods near the Navy Yard where there was a considerable undergrowth of scrubby bushes. Mr. A. T. Wayne, of Mount Pleasant, informs me that on October 16, he saw, but failed to secure a specimen of this wren near his house. Although abundant in some parts of the interior, Bewick's Wren is rare and local east of the Alleghanies and in South Carolina had never been recorded nearer the coast than the neighborhood of Columbia.

Previous to the past summer, **Worthington's Marsh Wren**, *Telmatodytes palustris griseus* (BREWST.), had been regarded as a very rare bird on the South Carolina Coast. On June 2, however, Mr. F. M. Weston, Jr., and myself established the fact that a Marsh Wren, which, as we had long been aware, bred abundantly in the marshes bordering Ashley River and Wappoo Cut, was none other than this supposedly rare variety.

¹ Spec. No. 7080, Chas. Mus.

Some weeks ago, during the overhauling of the collections preparatory to their removal to the new building, a specimen¹ was found which was identified by Mr. Wayne, honorary curator of birds, as the *Scarlet Ibis*, *Guara rubra*, taken in Florida and recorded by William Brewster in the *Bulletin Nuttall Ornithological Club*, VIII, 1883, p 185. Although mentioned by Coues in his *Key to North American Birds* as being in this Museum, this valuable specimen had been lost sight of for many years and is now much the worse for wear. The *Scarlet Ibis* is a South American species merely accidental in the United States, where it has been recorded only three times—by Audubon in Louisiana, by Coues in New Mexico, and by Brewster in Florida. Since Audubon failed to secure the bird which he saw and since Coues' specimen consisted simply of a fragment examined by him in 1864, the specimen in this Museum is probably the only existing example of the *Scarlet Ibis* ever taken in the United States.

HERBERT R. SASS.

THE NATURAL HISTORY SOCIETY

The Natural History Society held its first meeting this fall in Manigault Hall, October 16th. The meeting was devoted to informal reports of summer bird observations by members, a report of the executive committee outlining the plan of autumn and winter work, and the first of a series of talks on common birds, by the president, Mr. H. R. Sass.

The meetings of the Society will be held this year on the first and third Thursdays in each month, at 4:30 p. m. in Manigault Hall. Specimens of our common local birds will be brought in from the Museum and described, and field excursions will be organized by the Society with a guide to assist in identifying the birds seen. The *BULLETIN* is the official organ of the Society and prints many articles of interest to bird students. The May issue contained a particu-

¹ Spec. No. 960, Chas. Mus.

larly important classified list of local birds. Copies can be had at the Museum at five cents each.

Inquiries about the Society may be made of the Museum by telephone.

NOTES FROM THE MUSEUM

During the summer gratifying progress has been made on the tedious but very necessary task of preparing proper records of the specimens and books in the museum. When it is remembered that these collections have accumulated during more than a century and that the history of many of them has been lost or confused, both the necessity and difficulty of bringing the records down to date are apparent. Until it is done the collections cannot be moved without danger of irreparable confusion.

Mrs. Chase, of the Division of Agrostology, at Washington, recently visited the Museum for the purpose of studying some of the grasses in the Elliott Herbarium. Mrs. Chase's visit led to an examination of other herbaria in the Museum which disclosed the surprising extent of the Ravenel herbarium. Dr. H. W. Ravenel made a special study of the Fungi and his herbarium includes extensive collections of the lower orders of plants in a surprisingly perfect state of preservation. The herbarium also contains the plants which were the basis of his published account of the flora of the region of the Santee Canal. Two additional fascicles of the Elliott Herbarium have since been found, as well as some herbaria presented to the old Literary and Philosophical Society, and a printed copy of a letter from Dr. Felix L'Herminier, curator of the Museum from 1815 to 1819. The discovery of so much valuable material in a neglected condition emphasizes the necessity of the new system of records and of the improved storage facilities which the new building will provide.

BULLETIN
OF
THE CHARLESTON MUSEUM

EDITED BY
PAUL M. REA

HISTORY OF THE MUSEUM FROM 1798 TO 1850
ONE OF AUDUBON'S BIRDS
NOTES FROM THE MUSEUM

The Charleston Museum

UNDER THE AUSPICES OF THE COLLEGE OF CHARLESTON

Director

PAUL M. REA

Assistants

F. W. WAMSLEY

HERBERT R. SASS

Librarian

Honorary Curators

WM. G. MAZYCK.....	<i>Conchology</i>
DANIEL S. MARTIN.....	<i>Geology</i>
ARTHUR T. WAYNE.....	<i>Ornithology</i>
NATHANIEL W. STEPHENSON.....	<i>Art</i>

Student Assistants

HENRY LAURENS	<i>Zoology</i>
J. WIRRON WILLSON.....	<i>Ornithology</i>

THE CHARLESTON MUSEUM was in existence as early as 1777 under the auspices of the Charleston Library Society, was transferred to the Literary and Philosophical Society of South Carolina in 1815, to the Medical School in 1843, and to the College of Charleston in 1850. In 1907 a building was provided by the City and the name changed to The Charleston Museum.

The Museum is dependent upon dues from members and private subscriptions for all permanent improvements, for increase of the collections, and for maintenance of its educational and scientific work.

The membership fees are:—

ANNUAL MEMBERS.....	\$ 10	PATRONS.....	\$ 500
SUSTAINING MEMBERS.....	25	BENEFACTORS.....	1000

The privileges of members include admission on pay days, tickets to members' lecture courses, and copies of Museum publications.

THE BULLETIN OF THE CHARLESTON MUSEUM is published monthly, from October to May, by the Museum and is entered at the Post Office at Charleston, S. C., as second class matter.

BULLETIN

OF

THE CHARLESTON MUSEUM

VOL. 3 CHARLESTON, S. C., NOVEMBER, 1907 No. 7

HISTORY OF THE MUSEUM

THE PERIOD FROM 1798 TO 1850

BY WILLIAM G. MAZYCK

Having, we think, thus clearly proven the existence of the Museum belonging to the Charleston Library Society at least as early as 1777,¹ let us now endeavor to trace the connection of this most ancient of all American museums with the Charleston Museum of to-day.

In 1815 the Library Society transferred the Museum to the Literary and Philosophical Society of South Carolina which had been organized by Dr. Shecut in 1813, and of which Mr. Stephen Elliott was president. Dr. Felix L'Hermier was appointed Superintendent of the Museum and did much to arouse interest throughout the city. The details of this important period are omitted here, since they have been discussed by Miss Eola Willis in an earlier issue of the BULLETIN.² The condition of the Museum in 1826 is described by Mills³ as follows:

"The Literary and Philosophical Society is an institution that does great honour to the State. It was founded in 1813,

¹Bull. Chas. Mus. Vol. 3, No. 6, Oct., 1907.

²Vol. 2, No. 4, April, 1906.

³Statistics of South Carolina, Charleston, 1826, p. 437.

and comprises a large mineralogical cabinet, a number of subjects of natural history and botany.

"The Museum is situate on Chalmers street, nearly fronting the city square, and is well stored with curious objects in natural history, Indian antiquities, foreign and native works of art, &c."

I have found no later mention of the Society, except a single line in the "Index to the different societies in Charleston," in the City Directory for 1837-8, where it is listed with the "Rev. John Bachman, President, and J. De La Motta, M. D., Secretary."

The collection remained in the care of this Society for nearly thirty years.

In a circular printed on the last page of the "Catalogue of of the Trustees, Faculty and Students of the Medical College of the State of South Carolina," published in 1843, it is stated that "opportunities for the acquirement of a knowledge of Natural History are furnished, by the transfer to the College of the Museum of the Literary and Philosophical Society, which has been newly arranged and enlarged."

These words were repeated in subsequent circulars until May, 1846, and in that year acknowledgement is made of the receipt of several geological and other specimens from various donors.

In the minutes of the annual meeting of the Trustees of the College of Charleston, held October 18th, 1847, we find that "A letter addressed to the trustees of the College, from T. Leger Hutchinson, Mayor; Lewis R. Gibbes, prof. nat. phil; Elias Horlbeck and Wm. Hume, was read from the Chair, requesting that a basement room in the College edifice, not now occupied should be appropriated to the accommodation of a Collection of the Fossils of this State, now in possession of F. S. Holmes; whereupon it was resolved that the application in the said letter be granted, provided the consent of the Faculty be obtained." Two and a half years

later, in March, 1850, the American Association for the Advancement of Science met in Charleston, and at the session of Saturday, March 16th, Prof. Agassiz "recommended the formation in Charleston of a Museum around the nucleus of the old Museum now in the Medical College of this City, for the illustration of Paelaeontology and Natural History. He stated that there would be placed in the collection by Prof. Tuomey a full series of the fossils collected during the geological survey of the State.

"Dr. Holbrook will contribute fishes, etc; Prof. Shepard, minerals; Mr. Holmes, specimens of rocks and fossils; Lieut. Kurtz, shells of the coast; Dr. Burden, tertiary fossils.

"This was warmly seconded by Prof. Bache and Lieut. Maury, each of whom offered contributions." (Charleston Courier, Monday, March 18th, 1850.)

Interest in the subject of the rehabilitation and enlargement of "the old Museum" thus awakened, increased rapidly, and under the influence of several of the leading spirits in the scientific and educational circles of the city, the matter took definite shape, and at a meeting of the board of Trustees of the College, held on March 28, 1850, "the President stated that he was authorized to offer to the College of Charleston—on behalf of Prof. Tuomey, Mr. Agassiz and other gentlemen devoted to the pursuit of Natural Science—their Collections of Geological and fossil specimens, found in various parts of the State—Whereon it was resolved, that the offer of Prof. Tuomey is favorably received by this Board, and that they will give it all due consideration. Resolved, that it be referred to the Standing Comm. to enquire into the subject, and report to the Board of Trustees."

At the meeting of the Standing Committee, held May 4, 1850, it was:

"Resolved that the Chairman be and is hereby authorized to communicate with Dr. Bachman, and through him—or directly—as may be expedient, with Prof. Tuomey and Mr.

Francis S. Holmes on the terms on which they will lodge their Palaeontological collections, or part of them in the College of Charleston.

“Resolved that the Chairman at his earliest convenience prepare and lay before the Committee a report on the establishment of a College Museum.”

June 14 the Committee again met and “the Chairman made an elaborate report on the subject of the proposed Museum of Natural History—which had been referred to the Standing Committee—embracing the correspondence of the gentlemen who had tendered their collections of specimens, and much other valuable information on the subject. When it was resolved that the said report be made at an early day to the Board of Trustees.”

Accordingly at the meeting of the Board on July 15, 1850, “The President submitted to the board the report of the Standing Committee on the subject of the geological & fossil specimens offered by Mr. Tuomey, Mr. Agassiz, Dr. Bachman and Mr. Holmes—for the purpose of founding a Museum of Natural History in the College of Charleston—whereupon it was resolved, ‘That the report of the Standing Committee on the subject of a Museum be, and is hereby, accepted and Confirmed, and that it be submitted to the Mayor & Council for their consideration.’”

The minutes of City Council were lost during the war, but fortunately in the Charleston Courier of Friday, July 19, 1850, we find the following lengthy but interesting and important item:

“The following is the communication from the Trustees of the Charleston College, omitted in the published Proceedings of Council yesterday:

“When the American Association for the Advancement of Science held their meeting in Charleston, in March last, several of it’s most distinguished members expressed the opinion that the City possessed peculiar advantages for the establishment in it of a Museum of Natural History.

That such a Museum of great value and extent could soon be collected—and would not only highly subserve the promotion of knowledge and general spread of natural science in the South, but would be an honor to our City. The subject was brought before the Board of Trustees of the College of Charleston. They referred it to their Standing Committee, and the committee authorized their Chairman to communicate with some of the Scientific gentlemen among us, best able to advise on the subject, and to report the result. In pursuance of this authorization the Chairman respectfully reports:

“That he embraced the opportunity afforded by the recent visit to the South of Prof. Agassiz, to consult him specially on this subject. The professor had the goodness to make a written communication on it, which presents such interesting views of it, that justice could scarcely be so well done to them in any other way, as by submitting them in his own words to the Committee. After expressing his great gratification at the idea of the establishment of a Museum of Natural History in Charleston, the Professor observes:

“ ‘I am so deeply interested in every movement likely to contribute to the promotion of physical science that I beg to be allowed to present some remarks to you, which may satisfy you that such an establishment would be both useful to science and honorable to your Community, and I may say, also, easily increased without considerable expense. The only thing of first importance is a good room or set of rooms, with a *permanent* curator. Specimens of Natural History require constant attention, otherwise they decay, or are destroyed by insects. An intelligent keeper of the Museum, himself deeply interested in it's increase, is therefore, the soul of such an institution. Young physicians, feeling an interest in the growth of the collection, should also be patronized, so far as to allow them a convenient place where they could work for the museum while they were waiting for patients. With such a combination the museum could advance simultaneously in all departments. The whole expenses of the museum might therefore be reduced to the rent of rooms and the salary of the curator, with a moderate appropriation for freight to pay the expense of exchanges and the collection of specimens for exchanges. For it's increase a museum, which is not richly endowed must chiefly depend upon the activity of it's curator in procuring new specimens by way of exchanges. Now, I venture to say, that few places in the world, if any, are more favorably situated than Charleston, to offer valuable exchanges, owing to several circumstances which must be familiar to you. It was in Charleston the first specimens of Natural History were collected which have been scientifically described. Dr. Garden who was a regular correspondent of Linnaeus, provided him with many specimens, which have

been described in the *Systema Naturae*. Those objects are highly interesting to naturalists and the solution of several points of scientific critique will depend upon the re-examination of the specimens, as some of them have at a late period been obtained from other States further north, and considered as the things mentioned by Garden, although upon minute examination they may be found to differ. This is a question which might have been solved already with the assistance of a museum in Charleston. The work of Stephen Elliott upon the plants of South Carolina, that of Dr. Holbrook upon the reptiles of the U. S. in his Southern Ichthyology, the publication of Dr. Bachman upon quadrupeds and birds, the lists of shells of Dr. Ravenel, those of crustacea and lower animals by Dr. L. R. Gibbes, the lists of fossils in Mr. Tuomey's Geo. Report, those mentioned by Mr. F. S. Holmes, and many isolated papers published by Naturalists of South Carolina, in scientific periodical works, among which the papers of R. W. Gibbes are prominent, have given to the objects their [sic] mentioned an increased value, which will forever make zoological collections and fossils gathered in South Carolina more valuable for Museums in Europe than those of any other part of the Union; and I am sure for such specimens the Directors of museums abroad would be happy to send equally valuable returns. There is another point which will make the museum of Charleston very important. I mean the recent discovery of so many fossil remains of the higher class of Animals, which by themselves might form in a few years a collection unrivalled anywhere; not to speak of the interest of bringing out fully the natural character of the Fauna of the Southern States. It is to be hoped that with such prospects, the formation of a museum of Natural History in Charleston, will be hailed with satisfaction, and that all who can contribute specimens, or otherwise advance the interest of science, will come forward on this occasion to hasten so desirable a result.'

"These views of Prof. Agassiz are of the highest authority and importance, and present powerful motions for the adoption of the plan which he so strongly recommends.

"In a personal interview with the Rev. Dr. Bachman and a full interchange of opinion with him on this matter, he had the kindness to undertake to communicate with Professor Tuomey and Mr. Francis Holmes, and on the 14th of March last the Chairman addressed a letter to Dr. Bachman, submitting the leading points on which the Committee desired to ascertain the sentiments of Professor Tuomey and Mr. Holmes¹ about the 5th ultimo. Dr. Bachman wrote a note to the Chairman covering valuable communications from Mr. Holmes to him, of the 18th of May,

¹Evidently the period should follow Mr. Holmes' name, but I have given the punctuation as it occurred in the original.—W. G. M.

and 3d ultimo, and informing the Chairman that he had written to Professor Tuomey and had not heard from him. Professor Tuomey was supposed to be absent from Tuscaloosa, but he had before authorized Dr. Bachman to say that he would be glad to have his collection permanently established in our College. The Doctor says the same of his own collection. Both are understood to be highly valuable. The communications of Mr. Holmes are herewith submitted—they are too valuable to be abbreviated—they contain much information and evidence of devotion to a favorite science worthy of all praise. He too, unites with Dr. Bachman and Professor Tuomey, in tendering his important collection as a gift to the College. It is distinctly understood that if a museum be established in the College of Charleston, these collections are to be given as free gifts in perpetuity to the College. To use the emphatic language of Mr. Holmes "The materials for which others would have to spend many thousand dollars, are tendered gratis—and the splendid field, so very rich and unexplored, will yield specimens of great value at a cost of little labor and money." In addition to the collections of Dr. Bachman, Professor Tuomey and Mr. Francis S. Holmes, Dr. Bachman believes that the collection of the Philosophical Society now in the keeping of the Medical College, will be given at once to the College of Charleston. His [this] opinion of Dr. Bachman has been confirmed by every member of the Philosophical Society who has been consulted on this subject, and the Dean of the Trustees of the Medical College has given assurance, that if the College establishes a museum, he will, with pleasure, superintend the removal of the collection of the Philosophical Society, and all the cases containing it to the College buildings, and give directions to prevent confusion among the specimens or injury to them. With these assurances, and the prospect of speedily making ample additions to these collections from the abundant rare, and very valuable specimens known to exist in our State, a museum might be established, which to use the language of Prof. Agassiz, would be an honor to our community, and we may add an honor to our State. We cannot permit ourselves to doubt that were it fairly established, it could not *fail to receive the patronage of the State*. The collections then that would form an extensive and valuable museum, would, in themselves, cost us nothing. All that the College would be required to provide, would be rooms to receive and display them, a competent keeper to preserve and add to them—and a small amount to meet contingent, and yet necessary expenses. It is believed that the additions now making to the College Buildings, while they will be an ornament to the city, will, with the original building, afford ample accommodations for all the Professors, for the College Societies and the Library; and, under judicious arrangements, space sufficient for a large museum with the

necessary work rooms that ought to be connected with it. The additions in progress will give us eight large rooms, besides four rooms on the ground floor. Three Professors and one College Society require accommodation—one of the new rooms ought [sic] to become the Library—and the Library that is now on the same floor, with some of the new rooms that may be assigned for work rooms for the museum, would furnish accommodations for the largest museum that we can for a long time well hope to collect. The expense of these rooms may be said to be already incurred. The contract for them is made—an intelligent keeper, it is strongly and truly said is the soul of a museum. He is the living principle that adds to it and preserves it from decay. He must be devoted to science and possess the intelligence and ability to make his devotion available; such a person as would be fit for the office would not probably be obtained at a smaller salary than twelve hundred dollars—and the incidental expenses of the museum cannot be put at less than three hundred dollars annually.

“The yearly regular expenses therefore may be estimated at about fifteen hundred dollars and it is believed that at present that amount cannot be raised by private subscription, and under existing circumstances, could only be permanently provided by an annual appropriation by the city. It is confidently believed that such an appropriation would be amply compensated by the advantages which a well regulated and well sustained museum would bring to the city. It would aid greatly in exciting and rewarding a spirit of research and accurate enquiry among all our students of Natural History. It would furnish us with new and accurate information of the changes which have taken place in the different accessible strata of our State, and of the inhabitants in all the departments of nature, by which these strata have been successfully occupied. It would assist the agriculturist in studying the nature of his soil, and suggest the means of stimulating its fertility.

“It would bring us into direct relations with the distinguished naturalists of this country, and of Europe, and be a point of attraction to them under favorable auspices, and maintained with that zeal and ability, which it would surely deserve. It would be an ornament and an honor to the city and to the State.

“There are many important views connected with this subject, suggested by Mr. Holmes, in his valuable communications which, if the main subject, the Museum, can be obtained, may well be associated with it, and would certainly greatly extend its influence and usefulness. They would add nothing to its expense, and might, it is believed be so arranged as at some time hereafter, in a great measure to supply the means of its support.

"On the whole the plan of establishing a Museum of Natural History in our city, in connection with the College, is very earnestly commended to the Board of Trustees, and through them, if they encourage the undertaking, to the favor and support of the Guardians of the prosperity and honor of the city of Charleston.

"Respectfully reported.

"M. KING.

"This report has been laid before the Board of Trustees of the College of Charleston, and approved by them, and is by their instruction very respectfully submitted to the Mayor and Council for their consideration.

M. KING, President.

"To the Honorable the Mayor and City Council of Charleston. Charleston, July 15, 1850."

"Whereupon Alderman [S. Y.] Tupper offered the following Resolution:

"Whereas, by a Report from the Trustees of the College of Charleston, Submitted to this Body, it appears that sundry Scientific individuals have gratuitously tendered, as a free gift for the use and advantage of the public, their collections in the various departments of natural science, to form the nucleus of a museum in the Charleston College, connected with Geology, Natural History, Mineralogy, Paleontology, &c.; and as the prosperity of this institution is associated with the highest interests of our City and State, and is directly under the control and care of this Corporation: Be it therefore.

"*Resolved*, That so soon as the specimens which have been offered, according to the report of the Trustees of the College of Charleston, shall have been received, and the apartments now in course of construction in the College (destined for their accommodation) are prepared for their reception, the Trustees of that institution are duly authorized to elect a suitable person as Curator of the Museum.

"Alderman Tupper asked further leave to introduce at the next meeting a bill to provide for the appointment of a Curator for the Museum of the Charleston College and for other purposes. Leave granted."

This was accordingly done, and on Thursday, August 29, 1850, "An Ordinance to provide for the appointment of a Curator for the Museum of the College of Charleston" was

duly ratified, and it was published in The Courier on August 21 and for several weeks thereafter, and on Monday, November 25, at the meeting of the Trustees of the College, Mr. F. S. Holmes was elected Curator of the Museum. On December 28 he was "appointed Professor of Geology and Palaeontology in the College of Charleston," and on May 6, 1853 he was also "appointed and elected Professor of Natural History."

ONE OF AUDUBON'S BIRDS?

Among a number of old and more or less damaged specimens which have been stored for many years in one of the galleries, a bird was recently discovered which may prove of great interest and value. It is a representative of the Black-headed Grosbeak, *Zamelodia melanocephala* (SWAINSON), a western form ranging from Mexico to British Columbia; and there seems to be excellent reason to believe that it is one of Audubon's original specimens from which he made the drawings for his great work on American birds. A slip of paper, tightly folded and tied to the bird's leg, bears the inscription "Black Hills, Male, June 3, 34, J. K. Townsend." Audubon is known to have received several western birds from Townsend, who made a journey to the Columbia River in 1834. The female Evening Grosbeak, for example, from which Audubon made his drawing, was taken by Townsend in the Black Hills on June 3, 1834—the same day on which our Black-headed Grosbeak was taken. It is a well-known fact that some of Audubon's specimens were at one time in the Museum. It is stated in the old accession book of the Museum that "At this time [1850] large and valuable contributions, of skins of birds and quadrupeds, of fossils, shells, reptiles, fish and insects, were made by Rev'd Dr. Bachman, Mr. John Audubon, Professor M. Tuomey and Prof. Holmes the Curator." Most of the birds must have been destroyed, since no trace of them could be found up to the

discovery of the Black-headed Grosbeak. Should this bird prove to be really a lost specimen from Audubon's collection, the discovery will be a matter of considerable interest to the ornithological world.

NOTES FROM THE MUSEUM

Although many collections are being dismantled for removal to the new building, the Museum is open to the public on Saturdays from 10 to 5 and on other week-days from 10 to 12 and 1 to 5. Children unaccompanied by an adult are admitted only on Saturdays.

The BULLETIN wishes to call to the attention of the members of the "Nature Club," organized by Mr. Sewell last spring, as well as of teachers and all interested in our native birds, the unusual facilities afforded by the Natural History Society for becoming acquainted with our common birds. This is the most favorable season for beginning the study of birds, and those who join the Society now will have unusual facilities for acquiring knowledge of local birds. This not only affords an extremely interesting occupation, but the knowledge acquired will be the source of much pleasure through life. To the teachers in our schools this knowledge is especially desirable and the opportunity afforded by the Society should not be neglected.

Miss Olney's class from the Courtenay School, which visited the Museum last spring for a talk on Australian animals, came again recently in company with another class to see the animals of South America and listen to a similar talk. The Museum is glad to be of service to the schools in this way and invites other teachers to bring their classes for short talks on any subject in which they are interested. Mrs. Rea is visiting some of the city schools on behalf of the Museum for the purpose of learning in what ways the Museum

can best co-operate with teachers. Traveling exhibits are now in preparation which will prove of unusual interest.

The Director represented the college at the annual meeting of the Association of Southern Colleges and Preparatory Schools, held in Birmingham, Ala., Nov. 7 and 8, and took the opportunity while there of working up the iron and steel industry in the interest of the Museum. He secured a very complete series of specimens and photographs from which a circulating exhibit is being prepared for use in the city and country schools, as well as a comprehensive exhibit for the Museum. Plans are also being made for an extensive series of industrial exhibits, showing the economic importance of the natural resources of Charleston, to be installed in the new Museum.

THE BULLETIN is glad to note substantial progress on the new building, after many delays. A large amount of cataloging of books and specimens has been accomplished in preparation for moving, but this tedious work is necessarily slow with our small staff and unfortunately prevents the undertaking of much new work which would otherwise be done.

Recent accessions include a young Bald Eagle in the black phase, presented alive by Mr. W. E. McLeod, and a Golden Pheasant hen, presented by Mr. W. K. McDowell. Both of these birds fill gaps in groups which are otherwise well represented in the Museum. As we go to press, Mr. Louis Simonds has given the Museum the carcass of a Bottle-nosed Dolphin, *Tursiops tursio* (FABR.), which is the familiar "porpoise" of our coast. The skeleton of this specimen is being prepared by Mr. Wamsley of the Museum staff.

BULLETIN
OF
THE CHARLESTON MUSEUM

EDITED BY
PAUL M. REA

HISTORY OF THE MUSEUM SUBSEQUENT TO 1850
TRAVELLING EXHIBITS

The Charleston Museum

UNDER THE AUSPICES OF THE COLLEGE OF CHARLESTON

Director

PAUL M. REA

Assistants

F. W. WAMSLEY

HERBERT R. SASS

Librarian

Honorary Curators

WM. G. MAZYCK.....	<i>Conchology</i>
DANIEL S. MARTIN.....	<i>Geology</i>
ARTHUR T. WAYNE.....	<i>Ornithology</i>
NATHANIEL W. STEPHENSON.....	<i>Art</i>

Student Assistants

HENRY LAURENS	<i>Zoology</i>
J. WIRRON WILLSON.....	<i>Ornithology</i>

THE CHARLESTON MUSEUM was in existence as early as 1777 under the auspices of the Charleston Library Society, was transferred to the Literary and Philosophical Society of South Carolina in 1815, to the Medical School in 1843, and to the College of Charleston in 1850. In 1907 a building was provided by the City and the name changed to The Charleston Museum.

The Museum is dependent upon dues from members and private subscriptions for all permanent improvements, for increase of the collections, and for maintenance of its educational and scientific work.

The membership fees are:—

ANNUAL MEMBERS.....	\$ 10	PATRONS.....	\$ 500
SUSTAINING MEMBERS.....	25	BENEFACTORS.....	1000

The privileges of members include admission on pay days, tickets to members' lecture courses, and copies of Museum publications.

THE BULLETIN OF THE CHARLESTON MUSEUM is published monthly, from October to May, by the Museum and is entered at the Post Office at Charleston, S. C., as second class matter.

BULLETIN

OF

THE CHARLESTON MUSEUM

VOL. 3 CHARLESTON, S. C., DECEMBER, 1907 No. 8

HISTORY OF THE MUSEUM

THE PERIOD SUBSEQUENT TO 1850

BY WILLIAM G. MAZYCK

A few weeks before the election of the Curator, on Tuesday, July 30, 1850, at a meeting of the Standing Committee, "The Chairman stated that Dr. Frost, Dean of the Faculty of the Medical College had informed him, that the building now containing the Museum of the Philosophical Society, would be shortly taken down for the Roper Hospital about to be erected—and that it would be necessary to remove the same to the College of Charleston—whereupon it was resolved that the specimens contained in said Museum be accordingly removed to the library of the College of Charleston, Dr. Frost having kindly offered to attend to the removal of the specimens and cases in which they are contained."

In the selection of a Curator for the Museum the Board made a most admirable choice, for Mr. Holmes, besides being an ardent lover of nature and an enthusiastic student of Natural History and Geology, was a man of tireless energy, and possessing a certain indiscribable charm of manner, he soon enlisted the interest of a large number of friends in the new enterprise, whose numerous contributions, added to the treasures of "the Old Museum," enabled him "in the short

space of fourteen months" to transform a cabinet of curiosities, "things rare, curious, or beautiful," into a scientific Museum of the highest rank, an achievement which was fully recognized by the most acute judgment of the leading scientist of his age, as we learn from the following article from *The Courier* of January 26, 1852:

"Museum of the College of Charleston.—On Saturday last, at 12 M., the opening of this excellent and valuable Museum of Natural History and Geology was celebrated at the College Building, by an interesting ceremonial. By the invitation of the Board of Trustees, the Mayor and Aldermen of the city, the Faculty and Alumni of the College, and a large number of literary and distinguished guests were present. Professor F. S. Holmes, the able, scientific and devoted Curator of the Museum, showing how, in the short space of fourteen months (the period since he commenced operation) it had reached its present high and palmy state, and that, wholly from the voluntary contribution of specimens—the contributors having been about sixty-seven in number, and chiefly from the districts of Charleston Beaufort and Georgetown, and there being a certain prospect of early and valuable additions to the collection. The Hon. Mitchell King, President of the Board of Trustees, and the liberal patron of the College, then addressed the Mayor and Aldermen on the advantages of the Museum, giving a highly interesting sketch of its origin and progress, justly eulogizing the indefatigable labors and enthusiastic zeal of the Curator, and suitably acknowledging the past favors and invoking the continuance of the liberal aid extended by the City authorities to the infant enterprise. In the course of his remarks, he alluded in just terms to the presentation to the Museum of the valuable collection of the old Literary and Philosophical Society and to the large and valuable contributions of Professors Buchanan, [Bachman,] Agassiz, Gibbs, [Gibbes,] and Shepperd, [Shepard] and Henry W. Ravenel, Esqr., in the Botanical, and of Professor Holmes himself, in the Geological department, and of many other liberal friends of science. The Hon. John Schnierle made an eloquent response to the address of the President, congratulating the Trustees and the community on the increasing prosperity and usefulness of the College, and * * * recognizing in the Museum an institution eminently worthy of the fostering care which had been extended to it by the present Council and their predecessors in office. Professor Agassiz closed with a few remarks, in which he expressed unbounded admiration of the skilful and successful labors and arrangements of the Curator, stated the peculiar advantages enjoyed by Charleston for the

establishment of a Museum, especially from the invaluable fossil remains in her immediate vicinity, and announced the gratifying fact from his own personal observation, that our infant Museum, although but fourteen months old, has nothing to compare with it in the whole Union, save the superior institution in Philadelphia, which has existed for 30 years.

"The Museum occupies the entire extent of the upper story of the main college edifice and the specimens are most tastefully and skilfully arranged and classified. Its value is said by scientific men to be beyond computation in money, and its creation and possession are an honor to our City."

The formal "public opening" of the Museum was set for the following Saturday, January 31, 1852, not "in November, 1851," as Prof. Ashley states in his "very hastily prepared" General Guide to the Museum (p. 4), but though advertised in *The Courier* of that date and the day previous, there is no account of the proceedings to be found in the files of that paper. In the *Charleston Evening News* of February 2, 1852, there is, however, a column article describing in some detail the ceremonies of the occasion, but adding nothing to the historical facts noted above.

In the fall of 1853 the Elliott Society of Natural History was organized with Prof. Holmes as its Secretary and one of its most active members. The Society met at the College and its Books were deposited in the College Library and all contributions to its Collection in the Museum. Through this agency many valuable specimens were added to the rapidly increasing number, and to-day, with the exception of the old manuscript in the Charleston Library, perhaps the most important accession lists of any portion of the collection are to be found in the published "Proceedings" of the Society, or appended to its printed Constitution and By-Laws.

On October 28, 1861, Prof. Holmes reported to the Board of Trustees the receipt of a magnificent donation from Mr. James Hamilton Couper, of St. Simon's Island, Georgia, consisting of Fossils, Minerals and Recent Shells, "The

Cases contain several thousand specimens," and also a very beautiful and valuable collection of shells from Miss A. M. Annelly, of this City. Of these splendid gifts the Trustees enthusiastically say : "These additions to our treasures, we believe, make our conchological collection the amplest and richest in the Western World."

Prof. Holmes continued his work with unabated zeal until his appointment as Chief of the Nitre Bureau of the Confederate States, the duties of which position compelled his removal from the City.

On September 8, 1863, a meeting of the Board of Trustees was held, at which it was determined that the College Library should be removed to Camden and the Museum to Abbeville, S. C., and Mr. Holmes was requested to come to Charleston to confer with the Standing Committee and to superintend the removal of "such parts of it as it may be practical or expedient to remove." Mr. Holmes responded promptly and after consultation with him it was deemed best that :

"The village of Edgefield or some safe building near it should be the place of deposit. * * * The cases were to be sent by Rail to Aiken and wagoned thence about 20 miles. The larger articles were to be left in the Museum in Charleston, and a few were to be buried. The arrangement was carried out by Prof. Holmes in Sept. and Oct., 1863.

"A fire occurred in Edgefield in the fall of 1865, in a building in which a part of our Boxes were stored, and the contents of two boxes were destroyed. In this fire Professor Holmes lost a valuable library of scientific works.

"As soon as circumstances permitted Prof. Holmes was authorized to remove back to Charleston the articles sent away. These contained in 198 Boxes have been received, opened and replaced in their cases. The more careful distribution and labelling of the specimens has been commenced, but will require considerable time. The boxes were wagoned from Edgefield to Orangeburg, and then brought by the Railroad to Charleston, by the latter without charge.

"A considerable part of the Museum thus cared for consists of the valuable donation of J. H. Couper, Esq., who in the dispensations of

Providence, has within a few weeks, closed at an advanced age, a life of liberal culture, refined taste, and high character. He died on the 3rd July last, and was interred on St. Simon's Island, Georgia. A private letter remarks that 'all his old servants who could get conveyance' attended his funeral.

"It is gratifying to know, that our College selected by himself as the depository of his collections, has preserved, during the dangers of the war, this worthy memorial of his science and industry."

(See an exceedingly interesting and elaborate Report made by Mr. Daniel Ravenel, President, to the Board of Trustees of the College, at a meeting held August 27, 1866.)

On January 21, 1869, Prof. Holmes, after a service of nearly nineteen years, resigned the Curatorship, and March 19 following Prof. John McCrady was elected his successor. Prof. McCrady called to his assistance Dr. William Hume, under whose skilful hands much valuable work was done, especially in the Mineralogical Department of the collection.

Prof. McCrady resigned June 24, 1873, and was succeeded by Dr. Gabriel E. Manigault, who was elected on August 6, and who, notwithstanding a tendency to rather subordinate the purely scientific to the more particularly æsthetic features of the Museum, did some most admirable work, adding many exceedingly valuable and interesting specimens to the store of its treasures, notably among the larger North American Mammals. Dr. Manigault was an Osteologist of exceptional ability, and his beautiful preparations of skeletons, illustrating almost every family of the vertebrates, can hardly be equalled anywhere. Many of these, however, were mounted and deposited in the Museum during Prof. Holmes' administration. He was, too, fond of cabinet work and possessed of considerable mechanical skill, of which, as well as of his taste and care, many of the cases and much of the shelving and other appointments of the Museum bear witness. This skill was productive of most excellent results in the repair and rehabilitation of the College Buildings after the disastrous earthquake of August

31, 1886, and the Minutes of the Meetings of the Trustees bear ample evidence of his constant watchfulness of the interests, not only of the Museum, but of the whole institution during the several years through which, for lack of funds, the work of rebuilding was prolonged, for not until 1895 was he able to report its completion under his very competent supervision. In token of its appreciation of his invaluable services in this direction, "the condition of our finances forbidding us to indulge the natural desire to meet his deserts" otherwise, he was elected by the Trustees on June 28, 1889, Professor of Natural History and Geology, which chair he continued to fill, in conjunction with his duties as Curator of the Museum, until his death in 1889. During the latter part of his administration Dr. Manigault established a Department of Archaeology in the Museum, for which he purchased a number of interesting plaster copies of notable examples illustrative of ancient Assyrian and Egyptian art and history, and a very beautiful series of reproductions of ancient Greek vases from the celebrated terra cotta works at Copenhagen. Most unfortunately, however, owing possibly to a lack of room for their accommodation, and probably also to a failure to adequately appreciate their scientific value, the smaller, and, from the "popular" viewpoint, less attractive specimens, especially in the Department of the Invertebrata and of Mineralogy, were suffered to fall into a state of great neglect and consequent confusion. "It would appear from the labels that much valuable material, especially in the line of insects, had been lost through the ravages of Museum pests." (Prof. Ashley's Guide, p. 40.) A volume of the priceless Elliott Herbarium was discovered only a few months ago in a lot of rubbish in the cellar of the Library building. The greater portion of the magnificent conchological collection, which, as quoted above, the Trustees forty years ago felt justified in declaring was the "amplest and richest in the Western World," was thrown aside in the ut-

most disorder. The almost entire absence of any Museum records, too, is under any circumstances, except, of course, their accidental destruction, utterly inexcusable.

The grave question of the provision of larger space for the accommodation of the Museum had for many years occupied the attention of both the Trustees and the Faculty of the College, and in November, 1881, the Trustees concurred in a memorial to the Legislature, looking to the purchase of the building on Wentworth street, near King, then known as the Military Hall, now the Armory of the German Artillery. This memorial was "presented and referred" at the opening session of each House on November 22, 1881, (The News and Courier, November 23,) but I find no further mention of it, though its presentation probably resulted in the passage "without debate" on the last day of the session of

"AN ACT TO CREATE A MUSEUM OF NATURAL HISTORY IN THE CITY OF
CHARLESTON.

"SECTION 1. *Be it enacted* by the Senate and House of Representatives of the State of South Carolina, now met and sitting in General Assembly, and by the authority of the same, That a Museum of Natural History in the City of Charleston be, and the same is hereby, created, to be under the control and management of a Board of Commissioners, as hereinafter provided.

"SEC. 2. That the said Board of Commissioners shall consist of the Mayor of the City of Charleston, the chairman of the Board of Trustees of the College of Charleston, the Dean of the Faculty of the Medical College of South Carolina, and four other persons to be appointed by the Mayor of Charleston for the term of four years and until their successors are appointed.

"SEC. 3. That five members of the said Board shall constitute a quorum, and the Mayor of Charleston shall be the Chairman thereof. They shall hold their meetings at such times as the Board shall, by resolution, or as the chairman or vice-chairman, shall appoint. And they may adopt, alter, or amend such regulations as they may think proper for the establishment and development of the said museum.

"SEC. 4. That in order to procure a suitable location for the exhibition of the contents of the said museum, the said Board may purchase and hold in fee simple to them and their successors, any real estate not ex-

ceeding in cost twenty thousand dollars (\$20,000), and fit the same up with proper apartments for containing and exhibiting the specimens of said museum.

"SEC. 5. That the said Board are hereby authorized to receive and procure, by donation or otherwise, specimens of natural history connected with this State and elsewhere, and classify and arrange them in proper divisions, and to take all such steps as may be necessary or proper for preserving or adding to the same.

"SEC. 6. That the said Board are authorized to make any arrangements necessary for the procuring, as an addition to their collections, the museum now attached or belonging to the College of Charleston; not, however, purchasing the same.

"SEC. 7. That the location of the said museum shall be in the city of Charleston, in some suitable place to be procured by the said Board; and it shall be open each day, at such hours and under such restrictions as may be prescribed by said Board for the inspection, examination, and instruction, without charge, of all visitors thereto.

"In the Senate House, the third day of February, one thousand eight hundred and eighty-two.

J. D. KENNEDY, President of the Senate.

J. C. SHEPPARD, Speaker House of Representatives.

"Approved February 4th, A. D. 1882.

JOHNSON HAGOOD, Governor."

Nothing appears to have been done towards perfecting the organization contemplated, and when it is noted that the College was to have but one representative on the Board, and that it would be impossible to hold a meeting at which the Mayor and his appointees would not form a majority, it is not to be wondered at that the Trustees were not over hasty in promoting a scheme which (so far at least as the governing Board was concerned) had certainly drifted far from the mark aimed at in the memorial which they had signed, or aiding those "interested in procuring [without cost] as an addition to their collections, the Museum now attached or belonging to the College of Charleston"! especially when in the language of President Randolph "the scientific collections constitute the finest possession of the College." (Report, June 13, 1904.)

On September 1, 1900, Dr. George^W Hall Ashley^{Jr} was elected to succeed Dr. Manigault as Professor^{Jr} of Natural Sciences and Curator of the Museum.^{Wm} While no extensive^{Jr} additions were made to the collection during his administration, to such an extent did he arouse a wider and^{Jr} more intelligent interest in the Museum, through a series of illustrated lectures and the publication of a "Guide to the Museum," as to have merited the following commendation^{Jr} of his work in the Annual Report of the President of the College, submitted to the Board of Trustees, June 25, 1902: "It would thus seem that these collections, which represent half a century and more of thought and labor on the part of the distinguished scientists who have contributed to the upbuilding of the Museum, are to-day to a greater extent available to the public for study and investigation, and that the Museum, therefore, is likely more than ever to enter actively and usefully into the educational work of the City."

Prof. Ashley, having accepted a position as geologist with the United States Geological Survey, resigned May 28, 1903, and Professor Paul M. Rea was elected his successor on June 15 following.

Prof. Rea soon recognized the absolute necessity for procuring, not only additional room for the accommodation of the Museum, but the assistance of students in special lines for the care of the several Departments of the great collection which long ago had outgrown the reasonable capacity of any one individual, especially if he was to be burdened besides with the exacting duties of the class room or laboratory. This latter point he earnestly brought to the attention of the Trustees, and, as strongly recommended by him, "as a means of associating scientific men of Charleston with the Museum and of securing expert advice on technical questions," at their "Meeting held March 31, 1906, the following gentlemen were elected Honorary Curators in the Museum.*

*Bull. Coll. Mus. Vol. 2, No. 4, Apr., 1906, p. 32.

Prof. Daniel S. Martin, of Brooklyn, N. Y., Honorary Curator of Minerals, Rocks and Invertebrate Fossils.

Mr. Wm. G. Mazyck, of Charleston, S. C., Honorary Curator of Recent Shells.

Mr. Arthur T. Wayne, of Mt. Pleasant, S. C., Honorary Curator of Birds."

To this list there were subsequently added the names of Prof. N. W. Stephenson, Honorary Curator of Art, and Messrs. F. W. Wamsley and Herbert R. Sass, Assistants to the Director. Prof. Rea says:

"This increase in the Museum staff is one of the gratifying results of the renewed activity of the Museum. Under former conditions work at the Museum was altogether curatorial in its nature, and the one or two departments in which the curator was most interested and learned prospered at the expense of the others. Since the inauguration of the new policy * * * it has become increasingly evident that the time and energy of the curator could not possibly be extended to cover the necessary accessioning and revision of each department, and provide for its care and growth and also attend to the increasing opportunities for forwarding the educational side of modern museum management. * * * These and other manifold duties, both administrative and curatorial, have made necessary the help and advice of associates. The title of the curator was accordingly changed to Director, and the advice and help of experts enlisted by the appointment of honorary curators, specialists in the departments which they serve.

"Another reason for gratification in securing the interest and aid of these scientists, lies in the hope, thus strengthened, that the College of Charleston Museum may once more become the rallying point for scientific men of the generation, and thus renew the brightness of its name, which Shecut, Elliott, Holbrook, Audubon, Bachman, and Agassiz [Ravenel, Dickson, Holmes, Gibbes and McCrady] made famous."

The crowning evidence, however, of Prof. Rea's energetic work in behalf of his important charge is the successful result of his persistent effort to secure the spacious Thomson Auditorium as its permanent home.

The initial suggestion of this use of this building came from Mr. George S. Holmes to President Randolph of the College faculty, but it is due to Prof. Rea's activity and insis-

tence that it was finally secured at a nominal rental by lease from the City.

“The result is tremendous in its import for the Museum and for the city. Thousands of specimens, valuable for exhibition or for study, are packed away and entirely inaccessible for either purpose because of absolute lack of space to properly arrange them. * * * The collections have been found to be such, both in quantity and quality, as to hold an important position among the museums of the country. Without doubt the largest and most valuable museum in the South, it is surpassed only by the great museums of some Northern Cities.”

The building is splendidly located in Cannon Park, at the southeast corner of Rutledge Avenue and Calhoun Street, in an attractive portion of the City, readily accessible from all points by two trolley lines passing it. It contains about 35,000 square feet of floor space available for exhibition, and as much more for offices, library, reading room, storage and preparation rooms, laboratories and lecture rooms. It was erected in 1899 with funds bequeathed to the City by the late John Thomson, Esq., an adopted citizen and merchant of Charleston, whose memory will be perpetuated by a tablet to be placed in the hall of the new Museum. Under the contract with the City it is provided that this institution, for nearly a century and a half identified with the learned societies and scientific activity of the City, will continue to be administered by the Trustees of the College of Charleston and will hereafter be known as THE CHARLESTON MUSEUM.

TRAVELLING EXHIBITS

THE IRON AND STEEL INDUSTRY

As the first of a series of travelling exhibits in pursuance of the policy of the Museum of preparing industrial and educational exhibits, a travelling collection for schools has been completed to illustrate the production and manufacture of iron and steel. The exhibit includes much of the material collected by the Director in Birmingham, Alabama; material furnished by several Charleston firms; photographs copied from various sources; and a number of particularly instructive stereoscopic views. This is probably the first extensive traveling exhibit in the South and represents the most advanced modern ideas of educational museum work. It will be demonstrated by the Director at the meeting of the State Rural School Improvement Association at Columbia, S. C., Dec. 30 and 31, and will then be ready for actual use in Charleston schools. The exhibit is intended to supplement the study of geography and is prepared in two forms, one for pupils of high grammar or high school grade and one for younger students. The specimens are accompanied by question blanks to be filled in by the students as they study the specimens and a circular of information with full directions for the use of the exhibit is provided for the teacher.

The Director will be glad to receive applications from Charleston teachers for the use of this exhibit.

BULLETIN
OF
THE CHARLESTON MUSEUM

EDITED BY
PAUL M. REA

REPORT OF THE DIRECTOR OF THE MUSEUM
FOR THE YEAR 1907

The Charleston Museum

UNDER THE AUSPICES OF THE COLLEGE OF CHARLESTON

Director

PAUL M. REA

Assistants

F. W. WAMSLEY

HERBERT R. SASS

Librarian

Honorary Curators

WM. G. MAZYCK.....	<i>Conchology</i>
DANIEL S. MARTIN.....	<i>Geology</i>
ARTHUR T. WAYNE.....	<i>Ornithology</i>
NATHANIEL W. STEPHENSON.....	<i>Art</i>

Student Assistants

HENRY LAURENS	<i>Zoology</i>
J. WIRRON WILLSON.....	<i>Ornithology</i>

THE CHARLESTON MUSEUM was in existence as early as 1777 under the auspices of the Charleston Library Society, was transferred to the Literary and Philosophical Society of South Carolina in 1815, to the Medical School in 1843, and to the College of Charleston in 1850. In 1907 a building was provided by the City and the name changed to The Charleston Museum.

The Museum is dependent upon dues from members and private subscriptions for all permanent improvements, for increase of the collections, and for maintenance of its educational and scientific work.

The membership fees are:—

ANNUAL MEMBERS.....	\$ 10	PATRONS.....	\$ 500
SUSTAINING MEMBERS....	25	BENEFACTORS.....	1000

The privileges of members include admission on pay days, tickets to members' lecture courses, and copies of Museum publications.

THE BULLETIN OF THE CHARLESTON MUSEUM is published monthly, from October to May, by the Museum and is entered at the Post Office at Charleston, S. C., as second class matter.

- 41 -
1.1.2.0
24.0.0.0
1.1.2.0

BULLETIN

OF

THE CHARLESTON MUSEUM

VOL. 4 CHARLESTON, S. C., JANUARY, 1908 No. 1

REPORT OF THE DIRECTOR OF THE MUSEUM FOR THE YEAR 1907

The distinction of being the oldest museum in America, which has come to the Charleston Museum through the historical investigations of Mr. Wm. G. Mazyck; important improvements in organization, especially the compiling of records, and extension of educational work made possible by an increased staff; the assurance of a new building and the steadily growing interest and support of the public have been the achievements of the past year.

Of the needs of the Museum the Director desires to emphasize two. The first is the imperative necessity of immediate provision for the employment of a trained librarian for the proper care of the library. The second is the need of a permanent endowment adequate to give reasonable assurance of the ability of the Museum to care permanently for material entrusted to it.

HISTORY OF THE MUSEUM

The investigations of Mr. Wm. G. Mazyck constitute the important contribution of the year to the history of the Museum. These, with articles published in 1906, establish the fact that the Museum was in existence under the auspices

of the Charleston Library Society as early as 1777. It is, therefore, beyond question the oldest museum in America. The earliest record of specimens is in the form of an accession list covering the years 1798-1808, and many of the specimens there described are still in the possession of the Museum.

In 1815 the Library Society voted to give its collections and cases to the newly organized Literary and Philosophical Society of South Carolina. The enthusiasm with which this society undertook the development of the Museum is well shown by the following quotation from Shecut's Essays:*

"The opportune arrival of that distinguished naturalist and practical chemist, Dr. FELIX L'HERMINIER, from Guadaloupe, with an extensive collection of specimens, the fruit of twenty years application, expense and industry, which he offered to the society, was an advantage, not to be lost sight of. Negotiations were immediately entered into with that gentleman, by a committee of the society. The citizens were also invited to co-operate with them in effecting the purchase of this collection, towards the establishment of a respectable and scientific Museum in Charleston.

"Those persons who subscribed fifty dollars, on payment of that sum, became members for life. The State Legislature and the City Council, alive to the importance of this object, with a promptness and liberality, which will forever redound to their credit, contributed largely towards their purchase, and, with the sums subscribed by individuals, enabled the society to make a purchase of that valuable collection, which is now one of the chief, and perhaps, most interesting ornaments of the city.

"The superior personal attention and talents of Dr. L'HERMINIER, were also enlisted in behalf of the society, by being appointed superintendent of the Museum."

In 1843 the Museum had been transferred to the Medical College of South Carolina, by which it was rearranged and enlarged.

In 1850 interest in the Museum was stimulated by the meeting in Charleston of the American Association for the Advancement of Science and by the work in the city of the

*Shecut, Medical and Philosophical Essays. Charleston, 1819. Pp.49-50.

elder Agassiz and the Museum was transferred to rooms set apart for its use by the College of Charleston, under whose auspices it has grown steadily to the present time.

THE NEW BUILDING

The present quarters of the Museum are difficult of access, badly lighted, over crowded, and entirely without work rooms and storage rooms. The last annual report of the Director reviewed the movement for a better building which was the most prominent feature of our work in 1906. On the 8th of January 1907, City Council gave its final approval to a lease of the Thomson Auditorium to the Trustees of the Museum and provided a special appropriation of \$7,500 for remodeling and repairing the building.

In preparing plans for the new Museum the Director visited most of the large museums in the East and received valuable suggestions from many sources, especially from Dr. F. W. True, of the National Museum, and from Messrs. Hornblower and Marshall, architects of the new National Museum, who went over all the plans in detail and gave many valuable suggestions, without expense to the Museum.

The entire preparation of detailed plans and drawings was in the hands of Mr. F. W. Wamsley, of the staff, who made the drawings. Mr. Wamsley also had charge of the dismantling of much of the interior of the building before the contracts were let. Through his energy and careful supervision this work was completed at the small cost of \$165, and all the material cleaned, sorted and stacked so that it has been possible to use nearly all of it in rebuilding—a second important saving.

During the summer many unfortunate delays prevented progress but during the fall the work has been going forward steadily. The main changes are nearly completed and the building can be finished in a short time when a further appropriation is available.

MEMBERS

As a means of supplementing the city appropriation for maintenance and of providing for the growth and development of the Museum a system of membership was organized in December 1906.

The particulars of membership are printed on the second page of the cover and a list of the members for the year 1907 on the third page of the cover. The money received from membership fees constitutes the General Fund and is used to supplement the city appropriation for maintenance and to provide for all permanent improvements, increase of collections, and for the scientific and educational work of the Museum. The value of the Museum and the scope of its work are proportionate to the size of the General Fund and a large increase in the membership is essential to the success of the work. The fixed expenses of the coming year will exceed the present General Fund combined with the city maintenance appropriation.

FINANCES

Four years ago, at the beginning of the present administration the Museum was rapidly deteriorating on a total annual income of \$250. In the three following years City Council has increased the appropriation successively to \$1,000, \$1,500 and \$2,500. During the past year a supplementary fund has been created through the system of membership already mentioned.

The financial operations of the Museum are now included in three accounts.

City Maintenance Account.—This account at present receives an annual appropriation of \$2,500 from City Council. Against this account are charged all ordinary expenses of maintenance, including salaries of Director and two assistants and wages of janitor. This has been possible only through the devotion of the staff in serving at nominal sala-

ries awaiting the time when the Museum can be established on a better footing. Nevertheless, these fixed expenses will in the coming year exceed the appropriation by not less than \$750.

General Account.—This account receives the contributions of all classes of members, those of annual and sustaining members being used to meet deficiencies in the city maintenance account and to provide for the growth and development of the Museum.

The contributions of patrons and benefactors, unless given for specific purposes, are required to be invested as a permanent endowment, the income of which shall be used in the same manner as the annual contributions.

In the past year the sum of \$525 has been derived from the fees of annual and sustaining members. A portion of this fund has been used to meet a deficiency in the city maintenance account and the remainder has been expended on permanent improvements, including books and lantern slides, typewriter, storage cases, services of a specialist in the geological department, and a travelling exhibit for circulation among the schools.

The probable deficit of over \$750 in the city maintenance account during the coming year emphasizes the need of a large increase of the membership.

Special Accounts.—Contributions to the funds of the Museum, the principal or income of which is to be used for specific purposes constitute special accounts.

The appropriation of \$7,500 made by City Council for remodeling the Thomson Auditorium has been carried as a special account.

A gift of \$100 from a friend of the Museum, for the purchase of collecting apparatus has constituted a second special account.

The Director believes that the time has come for serious consideration of the menace which lies in the precarious financial support of the Museum.

The Museum represents a large financial investment and holds in trust many collections of high scientific value, requiring continual expert care to prevent deterioration. Any reduction in the annual contributions of members or in the city appropriation, even for a single year, would not only curtail the development and activity of the Museum but, by necessitating reduction of staff, leave valuable material without proper care.

The past one hundred and thirty years of the Museum's history have included not only periods of enthusiastic and generous support but also periods of misfortune and neglect. Four years after the wave of popular enthusiasm which elected Dr. L'Herminier Superintendent of the Museum in 1815, he found himself unable to make a living and was compelled against his will to resign, leaving the Museum apparently without a regular curator. Again in 1850-1854, over three hundred persons contributed specimens and in the following forty-five years devoted curators built up the largest museum in the South. Yet a few years later this splendid collection was decaying rapidly, with no regular curator to care for it and with only the ridiculously inadequate sum of \$250 a year to save it from utter and immediate ruin.

When one of the birds figured by Audubon is rescued from the rubbish or such invaluable specimens as the Carolina Paroquet or the Apteryx or the Elliott Herbarium are nearly destroyed as the price of neglect it is obvious that friends of the Charleston Museum should not rest until an adequate endowment gives reasonable assurance of the ability of the Museum to care permanently for material entrusted to it.

ADMINISTRATION

Undoubtedly one of the most important achievements of the past year has been the establishment of closer relations between the Museum and the public, including the schools and business organizations of the city and scientific institu-

tions throughout the country. The work with the schools will be discussed in connection with the department of Public Instruction.

The Director was invited to address the Manufacturers, Bankers, and Jobbers Association at its annual banquet, with the result that a committee was appointed to co-operate with him in introducing economic exhibits in the Museum.

At the invitation of the Rural School Improvement Association, the Director also attended the educational convention at Columbia, S. C., in December. At this meeting one of the travelling exhibits was demonstrated and it is hoped that the interest aroused by this exhibit will lead to co-operation which will enable the Museum to extend a helpful influence to the people throughout the State.

The Museum still retains the distinction of being the only Southern member of the American Association of Museums and at the second annual meeting at Pittsburg, in May, the Museum was honored by the election of its Director as Secretary of the Association. At this meeting the Director also read a paper on "Museum Records."

The supreme importance of creating a permanent endowment in the near future has been discussed (*supra*). The imperative necessity of providing for the employment of a trained librarian has also been mentioned and will be discussed in detail under Library.

The preparation of labels for the exhibition collections in the new building will be an enormous undertaking and can be economically accomplished only by means of a printing outfit in the Museum. For this purpose \$350 will be required and since a considerable amount of copy is already prepared, arrangements for printing should be made at once.

STAFF

The Museum staff has been greatly strengthened this year by the addition of two salaried assistants. Previous to 1906, the entire care of the Museum was appended to the

chair of Biology in the College of Charleston. In that year the appointment of Honorary Curators was authorized by the Trustees and the Director has been fortunate in securing for these positions men whose special knowledge has safeguarded the interests of the departments which they serve. Thus, the ornithological work of the past two years must have been all but impossible without the technical knowledge of Mr. Arthur T. Wayne, while the entire activity of the geological department is the work of its enthusiastic and devoted honorary curator, Professor Daniel Strobel Martin. To Mr. Wm. G. Mazyck the Museum is indebted for the thankless task of revising the sadly neglected conchological collections and also for the historical investigations already mentioned.

In January Mr. Francis W. Wamsley joined the staff as the first salaried assistant. Mr. Wamsley is a graduate of Brown University and an experienced marine collector. He came to Charleston from the Supply Department of the Marine Biological Laboratory at Woods Hole, Mass. Mr. Wamsley has had charge of the work in the new building and has shown a versatility and a devotion to the Museum to which is due much of the progress made.

In April Mr. Herbert R. Sass, who had been temporarily employed by the Museum for several months, became a regular assistant. Mr. Sass is a graduate of the College of Charleston. He has had charge of the records of the Museum, and in the absence of a regular librarian, has prepared the shelf list and carried the routine work of the Library. The latter work has entirely prevented Mr. Sass from carrying on the scientific work for which he is trained.

The proper maintenance of the Museum Library and the curatorial work of the Museum urgently require the immediate addition to the staff of a trained librarian. Under present conditions the salary of the librarian must be raised from private sources.

When the time comes for removal of the birds and mammals to the the new building the services of an expert taxidermist will be required to repair the damage wrought by neglect in previous years. Sufficient new work is also needed to keep a taxidermist regularly employed and for this work ability to make accessories is essential.

BOTANY

The Elliott Herbarium has been studied by a number of visiting botanists during the year. Dr. Ezra Brainerd examined the violets in March and was able to secure important data for his forth-coming revision of that group.

Mrs. Agnes Chase of the Division of Agrostology, at Washington, visited the Museum in October for the purpose of studying some of the grasses in the Elliott Herbarium. Mrs. Chase's visit led to a general examination of the herbaria in the Museum, which disclosed the surprising extent of the Ravenel Herbarium and revealed other herbaria of considerable interest. All of these have suffered seriously from the neglect of many years. As soon as possible suitable herbarium cases will be provided and it is very desirable that all of this material be worked over by competent botanists.

In 1905 Prof. John M. Macfarlane, of the University of Pennsylvania, examined the type specimen of *Saracenia Catesbaei* which is in the Elliott Herbarium and during the past year the Museum has received from him two papers containing the results of his study.

ZOOLOGY

The department of ornithology has had the benefit of the work of a number of student assistants, and has maintained the seasonal exhibit of local birds for the benefit of the Natural History Society. A begining has also been made of a study collection of bird skins. Field work in ornithology has been carried on with gratifying results, and is discussed under the head of Biological Survey.

Mr. Sass, of the staff, has shown that a specimen of the Black-headed Grosbeak, *Zamelodia melanocephala* (Swains.), in the Museum, is almost certainly the original specimen figured and described by Audubon in his great work on American birds. The specimen was found among rubbish and is another illustration of the necessity of the new system of records and of an adequate and efficient staff.

Considerable progress has been made in the revision of the extensive conchological collections.

A few mammals have been put up as skins and several skeletons are in preparation.

GEOLOGY

This department again owes much to its devoted honorary curator, Professor D. S. Martin, who has made further donations of books and specimens. Professor Martin spent three months revising the geological collections, and through his efforts more than 800 specimens of rocks and fossils have been identified and catalogued. The value of Professor Martin's labors can hardly be over-estimated and his devotion to the interests of the Museum is shown not only by his painstaking work but also by his many generous donations.

From the phosphate beds in the vicinity of Charleston a wonderful variety of valuable fossil material might be obtained, if the time and the means were available. The Museum already contains a valuable series of phosphate fossils and a number of new accessions have been made during the past year. The Museum is still unable, however, to undertake systematic collecting in the phosphate beds—a fact greatly to be deplored as it is certain that much valuable material could be obtained at very small expense.

ANTHROPOLOGY

Professor F. W. Putnam, head of the Peabody Museum at Harvard and of the department of Anthropology at the

University of California, visited the Museum in May and spent several days examining and revising the anthropological collection. Among other rare and valuable material this collection includes the oldest specimens known to be in the Museum, especially a native helmet from the Sandwich Islands and other articles presented in 1798. Another valuable specimen is a mummied human head obtained from the Mundrucus Indians of the River Tapajos by Lieut. Herndon, Commander of the United States Expedition to explore the River Amazon, and presented to the Museum in 1854.

Since Dr. Putman's visit these collections have been catalogued but further work has been prevented by lack of time.

ART

The frequent necessity of using Manigault Hall as a work-room and the lack of funds for improvements have hindered active work in the art department. Nevertheless the honorary curator, Mr. N. W. Stephenson, arranged in April a very charming loan exhibit of Japanese prints, accompanied by a lecture on "The Oriental Point of View in Art." A very interesting description of this loan exhibit was printed in the BULLETIN for April.

LIBRARY

The library constitutes one of the most important departments of the Museum, absolutely necessary for the use of the staff in preparation of exhibits. It should also be accessible to the public as a reading room.

The organization of a Museum library was begun by the Director four years ago. The government publications were transferred from the College Library, which was unable to care properly for them, and many valuable old books were obtained in this way. The more modern text-books were added by purchase for the Department of Biology of the College and the Director loaned much of his private library.

In the last two years the Museum has been able to add considerably to the library by purchase, while the publication of the BULLETIN has secured many important exchanges. The library of the defunct Elliott Society has also been deposited in the Museum. In these ways a very creditable library of about 1,000 bound volumes and more than 1,000 pamphlets has been accumulated.

The care of the library has been an increasingly difficult problem. At first the Director personally cared for and catalogued the books; then for nearly a year Mrs. Rea carried this work, without compensation. For the last two years the college librarian, Miss Frances Jervey, was employed for six hours per week. In these ways a classed catalog of the library has been maintained, including a small amount of analyzing. It was also found expedient to include in the catalog cards for the books of the Charleston Library Society bearing on the work of the Museum.

Since May, 1907, Mr. Sass of the staff, has served as acting librarian and has devoted a large proportion of his time to this work. Since Mr. Sass has been in charge of the library a standard accession book has been kept for the first time and during the summer a shelf list was prepared. The pamphlets have also been rearranged during the fall and the condition of the library is much better than it has ever been before.

This library of nearly 1,000 bound volumes and more than 1,000 pamphlets has been established in four years at a total expenditure for books, labor, bookcases, furniture and supplies, of \$501.69.

The library now needs an author catalog, extensive analyzing, and money for binding; but more than all it needs the entire time of a trained librarian. The present arrangement seriously encroaches upon the time of a member of the staff who is needed for other work. Moreover, merely the routine work of the library is accomplished and its efficiency

is very low in proportion to its possibilities. The library is already too large to be safely entrusted to an untrained recruit and finally, in the new building the growing work and the opening of a public reading room make it imperative that immediate provision be made to secure a competent person as librarian.

PUBLICATION

The BULLETIN has been published regularly during the year and has been the means not only of bringing important exchanges to the library, but of making friends for the Museum in Charleston and throughout the country. The addition of a cover has greatly improved its appearance.

Among the important articles which have been published during the year may be mentioned; "The Owls of Charleston and Vicinity," by Mrs. P. M. Rea, the first of a "Local Fauna" series; "The Relation of the Museum to the Schools," by Mrs. P. M. Rea; "A visit to the Grave of Thomas Walter," by Dr. Ezra Brainerd; "Synopsis of the Bird Records of the Natural History Society for the Year 1906;" three papers on the "History of the Museum," by Mr. W. G. Mazyck; "Ornithological Notes," including a record of Bewick's Wren at Charleston, and an account of one of Audubon's birds found in the Museum, by Mr. H. R. Sass.

The BULLETIN has been very favorably reviewed in Science during the year. Thanks are also due the local press for many favorable notices and for reprinting articles from the BULLETIN.

A series of scientific papers as "Contributions" from the Museum should be undertaken as soon as possible and it is hoped that the publication of such a series may be begun during the coming year.

PUBLIC INSTRUCTION

The Director lectured on "Organic Evolution" on Monday evenings during the first four months of the year. This

course was open to subscribers and to members of the Museum. When the number of members warrants it is intended that a series of lectures shall be given exclusively for members.

Free public lectures were also given as follows: "The Scientific Basis of Fairy Lore," by Professor Daniel Strobel Martin; and "The Oriental Point of View in Art," by Mr. N. W. Stephenson.

The Natural History Society has held two regular meetings each month except during the summer. One of these meetings has usually been devoted to a popular discussion of some topic of general interest in relation to birds. Thus Mrs. P. M. Rea described "The Owls of Charleston and Vicinity" with the aid of both living and mounted specimens; Mr. Sass has lectured on the "Habits of the Brown Pelican," and "Feathered Fishermen." The mid-monthly meeting of the Society has been devoted to reports of field work and demonstration of museum specimens of birds in season. The society has also provided a guide to accompany the members on field trips and assist in the identification of specimens seen. These facilities in connection with the seasonal exhibit of local birds are ample to enable any member to become personally familiar with all our common local birds. Members of the society have also carried on the Biological Survey.

In March the Director received a request from the Charleston County Teachers Association for an address on "The Relation of the Museum to the Schools." In response to this invitation Mrs. Rea addressed the Association March 9, outlining the plans of the Museum for effective co-operation with the schools. At the request of the Association this address was published in the March issue of the BULLETIN and copies were distributed to the teachers of the county and to the School Commissioners of Charleston. In response to one of Mrs. Rea's suggestions several teachers have since brought classes to the Museum for talks illustrated with specimens from the Museum on subjects related to their

geography courses. This work has met with signal success and would have been developed more rapidly but for the frequent necessity of using Manigault Hall as a workroom, and because of the limited time at the disposal of an over-worked staff.

A small amount of loan material has been sent out to the Memminger Normal school at the request of the teachers.

One of the most promising activities of this department has been the completion, during the closing weeks of the year, of the first of a series of travelling exhibits, designed for circulation among the schools of the city. The subject of this exhibit is the "Iron and Steel Industry." It includes specimens of common iron ores, maps and diagrams of their distribution, and stereographs, photographs, and specimens to illustrate the mining, transportation and smelting of the ore and the manufacture of iron and steel. The exhibit includes a circular of information for teachers and directions for use of the exhibit. As a further aid to teachers and to insure the best use of the exhibit question blanks have been prepared to accompany the specimens. When the answers have been filled in, the blanks constitute an epitome of the subject and can then be made the basis of a composition or essay in which the student shall describe in his own words what he has seen.

This exhibit is now ready for circulation among the schools of Charleston and similar exhibits will be prepared as rapidly as possible to illustrate the industries and natural resources of Charleston and other subjects related to the courses of study in the schools.

At the invitation of the Rural School Improvement Association the Iron and Steel Exhibit was demonstrated at the educational convention at Columbia, December 30 and 31. The Director offered to extend the circulation of the travelling exhibits to the schools of the State if special funds for this purpose can be provided.

This department is in sad need of new specimens of common local birds to fill gaps in the collection and to replace worn-out specimens. Most of the specimens now in use have been in the Museum from twenty to forty years. The department also needs a few series of well-colored lantern slides suitable for popular lectures. A beginning in this direction has been made through the receipt of a series of slides presented to the Museum by Doubleday, Page & Co., through Mr. H. B. Sewell.

BIOLOGICAL SURVEY

The importance of a thorough biological survey of the vicinity of Charleston has been emphasized from time to time by the Director. To this end systematic bird records have been made by members of the Natural History Society for about two years, and, considering that these were untrained observers, the records obtained during the first year, 1906, as published in the BULLETIN,¹ are very encouraging. Much better results may be expected for 1907 since the field work has been more regular and thorough. A synopsis of the 1907 records will be published in February.

The Director has long desired to extend the biological survey to the marine fauna of Charleston harbor and adjacent waters, the field of McCrady's classic work and is desirous of seeing marine aquaria installed in the Museum to exhibit the marine fauna, especially the food fishes of the coast. A friend of the Museum has provided a number of dredges with which collecting can now be carried on as rapidly as the time of the staff permits.

PAUL M. REA, *Director*.

¹Vol. 3, No. 5, May, 1907.

The Charleston Museum

UNDER THE AUSPICES OF THE COLLEGE OF CHARLESTON

Sustaining Members

J. P. KENNEDY BRYAN

MRS. C. R. BUŁCKMEYER

WARING P. CARRINGTON

HON. JOHN F. FICKEN

WILSON G. HARVEY

GEORGE S. HOLMES

MISS AGNES K. IRVING

SAMUEL LAPHAM

WILLIAM J. McCORMACK

W. HAMPTON MIXSON

JAMES S. MURDOCH

CAPT. THOMAS PINCKNEY

HON. R. GOODWYN RHETT

M. RUTLEDGE RIVERS

HON. JAMES SIMONS

HENRY A. M. SMITH

GEORGE W. WILLIAMS

HENRY P. WILLIAMS

Annual Members

HON. JOSEPH W. BARNWELL

G. HERBERT SASS

HON. AUGUSTINE T. SMYTHE

BULLETIN
OF
THE CHARLESTON MUSEUM

EDITED BY
PAUL M. REA

**SYNOPSIS OF THE BIRD RECORDS OF THE NATURAL
HISTORY SOCIETY FOR THE YEAR 1907**

The Charleston Museum

UNDER THE AUSPICES OF THE COLLEGE OF CHARLESTON

Director

PAUL M. REA

Assistants

F. W. WAMSLEY

HERBERT R. SASS

Librarian

Honorary Curators

WM. G. MAZYCK.....	<i>Conchology</i>
DANIEL S. MARTIN.....	<i>Geology</i>
ARTHUR T. WAYNE.....	<i>Ornithology</i>
NATHANIEL W. STEPHENSON.....	<i>Art</i>

Student Assistants

HENRY LAURENS.....	<i>Zoology</i>
J. WIRRON WILLSON.....	<i>Ornithology</i>

THE CHARLESTON MUSEUM was in existence as early as 1777 under the auspices of the Charleston Library Society, was transferred to the Literary and Philosophical Society of South Carolina in 1815, to the Medical School in 1843, and to the College of Charleston in 1850. In 1907 a building was provided by the City and the name changed to The Charleston Museum.

The Museum is dependent upon dues from members and private subscriptions for all permanent improvements, for increase of the collections, and for maintenance of its educational and scientific work.

The membership fees are:—

ANNUAL MEMBERS.....\$ 10	PATRONS.....\$ 500
SUSTAINING MEMBERS..... 25	BENEFACTORS..... 1000

The privileges of members include admission on pay days, tickets to members' lecture courses, and copies of Museum publications.

THE BULLETIN OF THE CHARLESTON MUSEUM is published monthly, from October to May, by the Museum and is entered at the Post Office at Charleston, S. C., as second class matter.

BULLETIN

OF

THE CHARLESTON MUSEUM

VOL. 4 CHARLESTON, S. C., FEBRUARY, 1908 No. 2

SYNOPSIS OF THE BIRD RECORDS OF THE NATURAL HISTORY SOCIETY FOR THE YEAR 1907

The Natural History Society is organized under the auspices of the Charleston Museum as a means of encouraging the study of the fauna and flora of the Coast Region of South Carolina. At present the Society consists of but one section, devoted to the study of birds. The records of this work are kept on cards especially designed for the purpose¹ and filed in the Museum at the end of each month. A synopsis of the first year's records was published in the BULLETIN² for May, 1907. The following list shows the results of the second year's work in comparison with those of 1906 and is published to indicate the nature of the work of the Society and to provide persons interested in our local birds with a list of the species most likely to be observed, and a statement, in each case, of the season when, in our experience, it has been seen. The list is by no means a complete synopsis of the birds of coastal South Carolina, and its incompleteness as well as the small number of records in many cases is due to the inexperience of most of the members of the Society and, especially, to their limited opportunities for field-work.

¹See Bull. Coll. Chas. Mus., Vol. 1, No. 4, pp. 34-36. ²Vol. 3, No. 5.

The following table is interesting in comparing the work accomplished during the two years:

Total number species recorded.....	184
Number species recorded in 1906.....	151
Number species recorded in 1907.....	166
Number species recorded only in 1906.....	19
Number species recorded only in 1907.....	34
Number species in which 1906 records are more complete than 1907 records.....	50
Number species in which 1907 records are more complete than 1906 records	73
Total number Permanent Residents recorded.....	69
Total number Summer Residents recorded.....	34
Total number Winter Visitants recorded.....	63
Total number Transient Visitants recorded.....	17
Total number species new to the coastal region.....	1

HORNED GREBE.—W V.¹ Jan - Mar 31, Oct 26 - Dec. In 1906, Jan-Apr 13, Oct 28-Dec.

PIED-BILLED GREBE.—P R.² Oct. In 1906, Feb - Mar.

LOON.—W V. Feb - Mar 9, Nov 2, In 1906, Feb - Apr 23, Nov 29 - Dec.

HERRING GULL⁵.—W V. Nov, Dec (?).

RING-BILLED GULL⁵.—W V. Dec (?).

LAUGHING GULL⁵.—W V. Oct 8 - Dec.

BONAPARTE'S GULL.—W V. Jan, Mar - Apr 30, Dec 8. In 1906, Apr 23, Dec. 9.

CASPIAN TERN.—P R. Nov. In 1906, no records.

ROYAL TERN?—S R³. Oct. In 1906, Jun.

COMMON TERN?—T V.⁴ Aug. In 1906, no records.

LEAST TERN.—T V. No records. In 1906, Jul, Aug, Oct (?).

BLACK TERN.—T V. Aug 23 - Sept 10. In 1906, Aug 1 - Sept 18.

BLACK SKIMMER.—S R. Jun 15 - Jul, Oct 25. In 1906, Jul 31 - Aug 4.

¹Winter Visitant—comes from its northern breeding-grounds to winter here.

²Permanent Resident—inhabits the coast region of South Carolina throughout the year.

³Summer Resident—comes from its southern winter home to breed here, returning in the fall.

⁴Transient Visitant—passes through here in the spring and fall on the way between its southern winter home and its northern breeding-grounds.

⁵Difficulty in distinguishing these forms from one another has led to confusion, so that comparison with 1906 records would be of no value.

WILSON'S PETREL.—S R. No records. In 1906, May.
 FLORIDA CORMORANT?—S R. Nov. In 1906, no records.
 BROWN PELICAN.—S R. Aug. In 1906, Jul, Sept.
 RED-BREASTED MERGANSER.—W V. Nov. In 1906, no records.
 HOODED MERGANSER.—W V. Nov 9 - Dec. In 1906, Feb - Apr
 15 (?), Dec 26.
 MALLARD.—W V. Jan, Dec. In 1906, Jan - Feb, Apr, Dec.
 BLACK DUCK.—W V. Oct 30 - Dec. In 1906, Dec.
 PIN-TAIL DUCK.—W V. No records. In 1906, Feb.
 WOOD DUCK.—P R. Jan, Dec. In 1906, Mar, Dec.
 CANVAS-BACK DUCK.—W V. No records. In 1906, Mar.
 SCAUP DUCK¹.—W V. April 23. In 1906, Jan - Apr 28, Dec. 16.
 AMERICAN GOLDEN-EYE?—W V. No records. In 1906, Feb.
 RUDDY DUCK.—W. V. No records. In 1906, Feb.
 CANADA GOOSE?—W V. Sept. In 1906, no records.
 WOOD IBIS.—S R. Sept. In 1906, Mar.
 AMERICAN BITTERN.—P R. No records. In 1906, Dec.
 LEAST BITTERN.—S R. Apr. In 1906, Apr.
 GREAT BLUE HERON.—P R. Jan - Dec. In 1906, Jan - Dec.
 AMERICAN EGRET.—S R. Sept - Nov 2. In 1906, no records.
 LOUISIANA HERON.—P R. Aug (?), Sept (?). In 1906, Apr.
 LITTLE BLUE HERON.—P R. Apr - Nov. In 1906, Mar - Oct.
 GREEN HERON.—P R. Apr - Oct. In 1906, Apr - Oct.
 BLACK-CROWNED NIGHT HERON.—P R. May, Aug - Nov. In
 1906, Oct - Nov.
 KING RAIL.—P R. Dec (many records near Georgetown). In
 1906, no records.
 CLAPPER RAIL.—P R. Jan, Mar, May - Oct, Dec. In 1906,
 Jan - Dec.
 YELLOW RAIL.—W V. Nov. In 1906, no records.
 FLORIDA GALLINULE.—P R. No records. In 1906, May.
 AMERICAN COOT.—W V. Oct - Nov. In 1906, Feb.
 AMERICAN WOODCOCK.—P R. Nov - Dec. In 1906, Dec.
 WILSON'S SNIFE?—W V. Sept. In 1906, no records.

¹No distinction made between Greater and Lesser Scaups.

RED-BACKED SANDPIPER.—W V. Nov. In 1906, no records.

WESTERN SEMIPALMATED SANDPIPER.—W V. Nov. In 1906, no records.

SANDERLING.—P R. Nov. In 1906, May.

WILLET.—P R. May, Nov - Dec. In 1906, Apr.

BARTRAMIAN SANDPIPER.—T V. No records. In 1906, Mar 11.

SPOTTED SANDPIPER.—P R. Nov. In 1906, Apr - May.

HUDSONIAN CURLEW.—T V. No records. In 1906, April 7.

BLACK-BELLIED PLOVER.—P R. Nov. In 1906, no records.

KILLDEER.—W V. Jan - Mar 10, Nov 4 - Dec. In 1906, Jan - Apr 15 (?), Nov 4 - Dec.

SEMIPALMATED PLOVER.—P R. Nov. In 1906, no records.

WILSON'S PLOVER.—S R. No records. In 1906, Mar.

AMERICAN OYSTERCATCHER.—P R. Jun, Nov. In 1906, Mar, Aug.

BOBWHITE.—P R. Jan - Feb, Apr - Sept, Nov - Dec. In 1906, Jan - Sept, Nov - Dec.

WILD TURKEY.—P R. Nov. In 1906, Feb.

COMMON DOVE.—P R. Jan - Jun, Aug - Dec. In 1906, Jan - Dec.

GROUND DOVE.—P R. May - Jun, Sept - Oct. In 1906, Aug - Sept, Nov.

TURKEY BUZZARD.—P R. Jan - Dec. In 1906, Jan - Dec.

BLACK VULTURE.—P R. Jan - Dec. In 1906, Jan - Dec.

SWALLOW-TAILED KITE.—S R. No records. In 1906, Apr 14.

MARSH HAWK.—W V. Jan - Mar 29, Oct 20 - Dec. In 1906, Jan - Mar 31, Sept 8 - Dec.

SHARP-SHINNED HAWK.—W V. Mar 3, Sept 2 - Dec. In 1906, Jan - April 14, Sept 8 - Dec.

COOPER'S HAWK.—P R. Jan, Mar (?), Sept - Dec. In 1906, confused with Florida Red-shouldered Hawk.

RED-TAILED HAWK.—W V. Feb - Mar 24, Aug 28, Dec. In 1906, Jan - Mar 17, Dec.

FLORIDA RED-SHOULDERED HAWK.—P R. Oct - Dec. In 1906, confused with Cooper's Hawk.

BALD EAGLE.—P R. Mar, May, Oct - Dec. In 1906, Jan - Apr, Oct.

DUCK HAWK.—w v. Nov. In 1906, no records.
 PIGEON HAWK.—T v. Oct 9, Nov 2 (?). In 1906, no records.
 SPARROW HAWK.—P R. Mar, Apr, Oct - Dec. In 1906, Jan - Apr, Dec.
 OSPREY.—S R. Mar 24 - Oct 20. In 1906, Mar 3 - Oct 5.
 BARN OWL.—P R. Jan. In 1906, Apr (?).
 FLORIDA BARRED OWL.—P R. Jan, Aug, Oct - Dec. In 1906, Jan, June, Dec.
 FLORIDA SCREECH OWL.—P R. Nov, Dec. In 1906, no records.
 GREAT HORNED OWL.—P R. Dec. In 1906, no records.
 YELLOW-BILLED CUCKOO.—S R. Apr 28 - Oct 11. In 1906, Apr 14 - Oct 8.
 BELTED KINGFISHER.—P R. Jan, Mar - May, Aug - Dec. In 1906, Jan - Jun, Aug - Dec.
 SOUTHERN HAIRY WOODPECKER.—P R. Jan, Sept - Dec. In 1906, Jan - Mar, Oct - Dec.
 SOUTHERN DOWNY WOODPECKER.—P R. Jan - Apr, Aug - Nov. In 1906, Jan - Apr, Jun, Aug - Dec.
 RED-CKOADED WOODPECKER.—P R. Nov, Dec. In 1906, Mar, Dec.
 YELLOW-BELLIED SAPSUCKER.—w v. Jan - Feb 24, Oct 10 - Dec. In 1906, Jan - Mar 12, Oct 28 - Dec.
 PILEATED WOODPECKER.—P R. Jan, Mar, Jun, Nov - Dec. In 1906, Feb, Mar, Oct, Dec.
 RED-HEADED WOODPECKER.—S R. Apr 30 - Jun, Aug - Dec 22. In 1906, Feb 22 - Oct 7.
 RED-BELLIED WOODPECKER.—P R. Jan, Apr, Sept - Dec. In 1906, Feb - Apr, Oct, Dec.
 FLICKER.—P R. Jan - Jun, Aug - Dec. In 1906, Jan - Apr, Jun, Aug - Dec.
 CHUCK-WILL'S-WIDOW.—S R. Jun, Aug 28. In 1906, Apr 7 - Jun.
 WHIP-POOR-WILL.—w v. Nov. In 1906, no records.
 NIGHT-HAWK.—S R. Apr 20, Jul - Oct 6. In 1906, Aug - Sept 20.
 CHIMNEY SWIFT.—S R. Mar 31 - Oct 16. In 1906, Mar 28 - Oct 28.
 RUBY-THROATED HUMMINGBIRD.—S R. Apr 19 - Sept 8. In 1906, Jun 21 - Sept 24.

- KINGBIRD.—S R. Apr 21 - Oct 1. In 1906, Apr 10 - Oct 4.
- CRESTED FLYCATCHER.—S R. Apr 14 - Sept 8. In 1906, Apr 13 - Sept 18.
- PHŒBE.—W V. Jan - Mar 10, Oct 11 - Dec. In 1906, Jan - Mar 17. Oct 7 - Dec.
- WOOD PEWEE.—S R. Apr 25 - Jun, Aug - Oct 6. In 1906, May 20 - Sept 18.
- BLUE JAY.—P R. Jan - Dec. In 1906, Jan - Dec.
- AMEIRCAN CROW.—P R. } In 1907 and 1906 crows were recorded
FISH CROW.—P R. } everymonth. Nodistinction made be-
 } tween American Crow & Fish Crow.
- BOBOLINK.—T V. Apr 23 - May 5, Aug 26 - Nov 9. In 1906, May 13, Sept 8 - Oct 14.
- COWBIRD?—W V. No records. In 1906, Nov.
- RED-WINGED BLACKBIRD.—P R. Jan - Dec. In 1906, Jan - Dec.
- MEADOW LARK.—P R. Jan - Apr 21, Oct 14 - Dec. In 1906, Jan - Apr 15, Oct 14 - Dec.
- ORCHARD ORIOLE.—S R. Apr 17 - Aug 1. In 1906, Apr 13 - Sept 18.
- RUSTY BLACKBIRD.—W V. No records. In 1906, Feb, Mar.
- FLORIDA GRACKLE.—P R. May, Dec (common near George-town). In 1906, Feb - May.
- BOAT-TAILED GRACKLE.—P R. Jan - Jun, Sept - Dec. In 1906, Jan - Dec.
- PURPLE FINCH.—W V. Mar - 12. In 1906, no records.
- AMERICAN GOLDFINCH.—W V. Jan - Apr 25, Nov 28 - Dec. In 1906, Jan - Feb 22, Nov 3 - Dec.
- PINE SISKIN.—W V. No records. In 1906, Mar.
- VESPER SPARROW.—W V. Mar - 29, Oct 30 - Dec. In 1906, Jan - Mar 25, Nov 4 - Dec.
- SAVANNA SPARROW.—W V. Mar - May 4, Oct 24 - Dec. In 1906, Mar.
- GRASSHOPPER SPARROW.—W V. Oct 24 - Dec. In 1906, no records.
- HENSLOW'S SPARROW.—W V. Nov - Dec. In 1906, no records.

LECONTE'S SPARROW.—W v. Nov. In 1906, no records.

ACADIAN SHARP-TAILED SPARROW—W v. Nov. In 1906, no records.

WHITE-THROATED SPARROW.—W v. Jan - May 1, Oct 24, - Dec. In 1906, Jan - Apr 26, Oct 27 - Dec.

CHIPPING SPARROW.—P R. Mar - Apr, Nov - Dec. In 1906, Feb - Apr, June, Dec.

FIELD SPARROW.—P R. Jan - Apr, Aug - Dec. In 1906, Jan - Apr, Dec.

JUNCO.—W v. Jan, Mar 16, Nov 28, - Dec. In 1906, Jan - Mar 12, Nov 25 - Dec.

BACHMAN'S SPARROW.—P R. Aug - Dec. In 1906, no records.

SONG SPARROW.—W v. Jan - Apr 21, Oct 20 - Dec. In 1906, Jan - Apr 13, Oct 14 - Dec.

SWAMP SPARROW.—W v. Apr 28, Oct 22 - Dec. In 1906, no records.

FOX SPARROW.—W v. Jan - Feb, Dec. In 1906, Dec.

RED-EYED TOWHEE¹.—W v. Jan - Apr 14, Sept 3, Dec.

WHITE-EYED TOWHEE¹.—P R. Feb - Jun, Aug - Oct.

CARDINAL.—P R. Jan - Dec, In 1906, Jan - Dec.

BLUE GROSBEAK.—S R. May. In 1906, no records.

NONPAREIL.—S R. Apr 21 - Oct 21. In 1906, Mar 11 - Nov 4.

SUMMER TANAGER.—S R. Apr 25 - Jun, Aug - Sept 27. In 1906, Apr 13 - Sept 18.

PURPLE MARTIN.—S R. Mar 10 - Sept 26. In 1906, Mar 5 - Oct 24.

BARN SWALLOW.—T v. Apr 13 - May 5, Aug 21 - Sept 18. In 1906, Apr 4 - May 20, Aug 11 - Oct 11.

TREE SWALLOW.—W v. Apr - 21, Sept 29 - Nov. In 1906, Mar, May 9, Oct 13 - Nov.

ROUGH-WINGED SWALLOW².—P R. May - Jun, Aug - Sept(?).

CEDAR WAXWING.—W v. Jan 1 - May 21, Dec 25. In 1906, Jan 28 - May 1.

¹No records given for 1906 because, during part of that year, the two Towhees were confused.

²In 1906, confused with Bank Swallow.

- LOGGERHEAD.—P R. Jan - Dec. In 1906, Jan - Dec.
- RED-EYED VIREO.—S R. Mar 31 - Jun, Sept - Oct 11. In 1906, Apr 13 - Jun, Aug - Oct 23.
- YELLOW-THROATED VIREO.—S R. Apr 14, Sept - 14. In 1906, Sept 18.
- BLUE-HEADED VIREO?—W V. Dec. In 1906, no records.
- WHITE-EYED VIREO.—P R. Jan, Mar - Jun, Aug - Oct. In 1906, Mar - Oct.
- BLACK AND WHITE WARBLER.—T V. Jan 17 (?), Apr 12 - May 13, Sept 4 - Oct 23. In 1906, Aug 11 - Dec 1.
- PROTHONOTARY WARBLER.—S R. Apr 20. In 1906, no records.
- SWAINSON'S WARBLER.—S R. No records. In 1906, Apr 13.
- WORM-EATING WARBLER.—T V. No records. In 1906, Sept 12.
- PARULA WARBLER².—S R. Mar 24 - Jun, Aug - Oct 4. In 1906, Mar 17 - July, Sept - Oct. 8.
- YELLOW WARBLER.—S R. Apr 24 - May, Sept - Oct 2. In 1906, Apr 21 - May, July - Sept 27.
- BLACK-THROATED BLUE WARBLER.—T V. Oct 14 & 19. In 1906, Apr 28 - May 12, Oct 5 - 28.
- MYRTLE WARBLER.—W V. Jan - Apr 28, Oct 17 - Dec. In 1906, Jan - Apr 28, Oct 10 - Dec.
- BLACK-POLL WARBLER.—T V. May 13 - 16. In 1906, no records.
- YELLOW-THROATED WARBLER.—P R. Mar - June, Aug, Oct. In 1906, Mar - Jun, Aug - Nov.
- PINE WARBLER.—P R. Jan - Jun, Aug - Dec. In 1906, Jan - Jun, Sept - Oct, Dec.
- PALM WARBLER.—W V. Nov 21 - Dec. In 1906, no records.
- YELLOW PALM WARBLER.—T V. Nov 4. In 1906, no records.
- PRAIRIE WARBLER.—S R. Apr 12, Aug - Sept 27. In 1906, Aug - Sept 20.
- OVENBIRD.—T V. May 11 - 13. In 1906, Oct 28.
- GRINNELL'S WATER-THRUSH.—T V. Sept 14 - 26. In 1906, no records.

²No distinction made between Parula and Northern Parula.

- YELLOWTHROAT**¹.—P R. Jan, Mar - May, Sept - Nov. In 1906, Mar - Apr, Aug - Dec.
- YELLOW-BREASTED CHAT**.—S R. May 25 - Jun, Aug 24. In 1906, Jun 13 - 21.
- HOODED WARBLER**.—S R. Apr 13, Aug - Sept 13. In 1906, Aug 29.
- REDSTART**.—T V. May 11, Sept 13 - Oct 23. In 1906, Aug 19 - Oct 27.
- AMERICAN TITLARK**.—W V. Jan - Mar 10, Oct 30 - Dec. In 1906, Jan - Mar 25, Nov 5 - Dec.
- MOCKINGBIRD**.—P R. Jan - Dec. In 1906, Jan - Dec.
- CATBIRD**.—W V. Jan - Apr 28, Sept 26 - Dec. In 1906, Jan - Mar 17, Sept 18 - Oct, Dec.
- BROWN THRASHER**.—P R. Jan - Dec. In 1906, Jan - Dec.
- CAROLINA WREN**.—P R. Jan - Jun, Aug - Dec. In 1906, Jan - Dec.
- BEWICK'S WREN**¹.—ACCIDENTAL. Oct 17. In 1906, Dec (?) (one very doubtful record.)
- HOUSE WREN**.—W V. Feb, Apr 12, Oct 21 - Dec. In 1906, Feb - Apr 13.
- WINTER WREN**?—W V. Dec (one doubtful record). In 1906, no records.
- SHORT-BILLED MARSH WREN**.—W V. Nov 8 - Dec. In 1906, Nov 18.
- LONG-BILLED MARSH WREN**.—W V. Not distinguished from the following species.
- WORTHINGTON'S MARSH WREN**.¹—P R. Mar - July, Nov. In 1906, Jan, Mar - Nov.
- BROWN CREEPER**.—W V. Jan - Mar 17, Nov 13. In 1906, Jan - Feb 18, Oct 29 - Dec.
- FLORIDA WHITE-BREASTED NUTHATCH**.—P R. Jan - Feb, May, Aug - Dec. In 1906, Jan - Apr, Oct, Dec.

¹No distinction made between Southern and Northern Yellowthroats.

¹A Bewick's Wren taken at the Navy Yard on Oct. 17, 1907, is the only specimen of this species ever taken on the South Carolina coast.

¹Some of these winter records may refer to Long-billed Marsh Wrens.

- RED-BREASTED NUTHATCH.—W V. No records. In 1906, Oct 10 - Nov 2.
- BROWN-HEADED NUTHATCH.—P R. Jan, May, Oct - Dec. In 1906, Feb, Dec.
- TUFTED TITMOUSE.—P R. Jan - Jun, Aug - Dec. In 1906, Jan - Dec.
- CAROLINA CHICKADEE.—P R. Jan - Jun, Aug - Dec. In 1906, Jan - Jun, Aug - Dec.
- GOLDEN-CROWNED KINGLET.—WV. Feb - Mar 17, Nov 12 - Dec. In 1906, Mar 25, Oct 27 - Dec.
- RUBY-CROWNED KINGLET.—W V. Jan - Apr 21, Oct 11 - Dec. In 1906, Jan - Apr 14, Oct 21 - Dec.
- BLUE-GRAY GNATCATCHER.—P R. Mar - Jun, Sept - Oct. In 1906, Feb - Apr, Jun - Sept.
- WOOD THRUSH.—S R. May 26 - Jun, Oct 11. In 1906, Apr 10 - Oct 7.
- WILSON'S THRUSH.—T V. Sept 7. In 1906, no records.
- HERMIT THRUSH.—W V. Jan - Mar 29, Oct 28 - Nov. In 1906, Jan - Apr 8, Oct 28, Dec.
- ROBIN.—W V. Jan - Mar 10, Nov 26 - Dec. In 1906, Jan - Apr 16, Dec 23.
- BLUEBIRD.—P R. Jan - May, Aug - Dec. In 1906, Jan - Apr, Jun, Aug - Dec.
-

BULLETIN
OF
THE CHARLESTON MUSEUM

EDITED BY
PAUL M. REA

MUSEUM RECORDS—A REPORT OF PROGRESS
THE NATURAL HISTORY SOCIETY
NOTES FROM THE MUSEUM

The Charleston Museum

UNDER THE AUSPICES OF THE COLLEGE OF CHARLESTON

Director

PAUL M. REA

Assistants

F. W. WAMSLEY

HERBERT R. SASS

Librarian

Honorary Curators

WM. G. MAZYCK.....	<i>Conchology</i>
DANIEL S. MARTIN.....	<i>Geology</i>
ARTHUR T. WAYNE.....	<i>Ornithology</i>
NATHANIEL W. STEPHENSON.....	<i>Art</i>

Student Assistants

HENRY LAURENS	<i>Zoology</i>
J. WIRRON WILLSON.....	<i>Ornithology</i>

THE CHARLESTON MUSEUM was in existence as early as 1777 under the auspices of the Charleston Library Society, was transferred to the Literary and Philosophical Society of South Carolina in 1815, to the Medical School in 1843, and to the College of Charleston in 1850. In 1907 a building was provided by the City and the name changed to The Charleston Museum.

The Museum is dependent upon dues from members and private subscriptions for all permanent improvements, for increase of the collections, and for maintenance of its educational and scientific work.

The membership fees are:—

ANNUAL MEMBERS.....	\$ 10	PATRONS	\$ 500
SUSTAINING MEMBERS.....	25	BENEFACTORS	1000

The privileges of members include admission on pay days, tickets to members' lecture courses, and copies of Museum publications.

THE BULLETIN OF THE CHARLESTON MUSEUM is published monthly, from October to May, by the Museum and is entered at the Post Office at Charleston, S. C., as second class matter.

BULLETIN

OF

THE CHARLESTON MUSEUM

VOL. 4 CHARLESTON, S. C., MARCH, 1908 No. 3

MUSEUM RECORDS

A REPORT OF PROGRESS

Three years ago a general reorganization of the Museum was undertaken for the purpose of making it of greater service to the people and of preserving and developing its scientific value. In a lecture which was printed in the first issue of the BULLETIN the Director outlined the work of a modern museum of natural history, laying special stress upon accurate and permanent records as the indispensable foundation of all future usefulness of specimens. He then showed the importance of dividing the collections into reserve or study series and exhibition series, the former affording the specialist an orderly and accessible arrangement convenient for study, the latter affording the public carefully selected series of especially interesting and instructive specimens, arranged to illustrate particular subjects, explained by descriptive labels, and supplemented by lectures. This arrangement relieves the exhibition halls of collections monotonously uninteresting to all but special students while at the same time emphasizing the absolute dependence of the exhibition series upon the study series and of this in turn upon accurate records. In short, it is the duty of a public mu-

seum to collect and preserve scientific data *and to utilize these data for the education of the people*, who support the museum.

In the past three years the Charleston Museum has carried on its educational work through the medium of the Natural History Society, public lectures, talks to schools, loan and travelling exhibits, and the pages of the BULLETIN and the daily press. The public has responded with increasingly generous support and yet few changes have been made in the obsolete exhibits of the museum halls. This is, of course, due in part to the prospect of removal to a new building, but the public may well ask why new exhibits are not more rapidly forthcoming and the Director believes that an attempt to answer this question will bring the public into closer sympathy with the present work and future prospects of the Museum.

Readers of the BULLETIN are aware that the Museum is the result of more than one hundred and thirty years' growth and that it has been moved a number of times and passed through many periods of adversity as well as of enthusiastic and generous support. All of these vicissitudes have produced much confusion of the records since the history of each specimen has merely been written on a paper label laid beside it and seldom attached to it. Unfortunately, the data were frequently incomplete in the beginning; in hundreds of cases all signs of labels have entirely disappeared; in many others the ink has faded or the paper decayed; and even when labels and specimens both exist they are almost always so mixed together that each tray or shelf or box must be studied and arranged by a specialist before any specimens can be moved.

Since all activities of a museum are dependent upon accurate records and since such records had never been kept in this museum and especially since any attempt to move the Museum before the records were straight would result in further

confusion, a system of numbering and cataloging specimens was devised after consideration of the methods of many other museums, and the enormous task of supplying the records of a century was undertaken. From time to time notes of progress have appeared in these pages and the monotony of the work has been relieved by the excitement of recovering lost treasures.

We cannot expect the average visitor to be deeply interested in the details of museum book-keeping but we do think that some of the results of our inventory are so dramatic as to interest the readers of the BULLETIN and convince them of the importance of this side of our work.

The Elliott Herbarium was early provided with a fire-proof safe and is frequently consulted by visiting botanists. Subsequently several additional fascicles of this valuable collection have been recovered from rubbish heaps.

Important and probably unique collections of Russian minerals and of phosphates from all over the world have been gathered together, re-identified, and permanently recorded by Professor Martin, to whom the geological department is in many ways deeply indebted. In both of these collections, however, some specimens are missing and others without data. These show the imperative necessity of the work we are doing.

The history of some specimens has been followed for more than a century, *e. g.*, the Sandwich Island helmet and other articles presented in June, 1798. The romantic history of the "fossil man of Guadaloupe" has been recalled and noted for a future label.

The rare interest of many specimens has come to light in process of recording. Thus, we learn that, while specimens of the Jabiru, a South American stork, are to be found in only three or four of the largest Museums in this country, our specimen has been here twenty-five years. For more than fifty years the Museum has had a specimen of *Solenodon*, a

rare insectivorous mammal from Cuba, only five or six others having found their way to the Museums of Europe and America.

Just now the staff is engaged in an effort to identify the specimens figured by Audubon in his classic work on American ornithology. Trays of headless, tailless, moth-eaten birds have been gathered from the dark corners to be compared with published plates, while labels must be sent to all parts of the country for identification of handwriting. Undescribed shells, type specimens of plants and fossils have been recovered and much is yet to be done. Old jars of fishes and reptiles remain to be searched for Holbrook's types, Audubon and Bachman mammals remain to be traced, herbaria to be revised, and the records of specimens received through the Elliott Society made straight. It sometimes takes days or weeks to complete the record of a single specimen—such is the price of neglect!

More than four thousand specimens have been worked up, permanently numbered, and cataloged in the past two years. This is the explanation of the slow progress in preparing exhibits and since our present quarters have no store-rooms and workrooms it has even been necessary to use Manigault Hall for these purposes and to restrict its use as a lecture room in consequence. We trust that friends of the Museum will rejoice with us that this revision of the collections has not come too late to restore much of the original value of the oldest Museum in America, and will realize that the foundation is being laid for exhibits of the future.

The story of the work which is necessary to prepare exhibits after the study series is in order, is reserved for a later article.

NATURAL HISTORY SOCIETY

The pages of the BULLETIN have been so crowded recently that it has not been possible to chronicle the work of the Natural History Society. Two meetings have been held each month, one of an entirely informal character devoted to reports of field work and descriptions of birds of the current season, the other an open meeting with a lecture on some subject of general interest associated with birds. These lectures have been given by Mr. Sass as follows: November, Birds of Prey; December, Feathered Fishermen; January, Birds of the Past. All of these have been illustrated with specimens and lantern slides, while the last was rendered especially interesting by Dr. Wilson's very appropriate verses which we print below for the benefit of our readers.

The open meeting in March was devoted to discussion of the birds which were seen on the excursion of February 22, in which nearly every member of the Society participated. Through the courtesy of a friend of the Museum the trip was made on a large and comfortable launch so that it was possible to invade the haunts of both water and land birds. The eagles, cormorants, herons, etc., were new to many of the party and the excursion aroused much enthusiasm.

Field trips to the Navy Yard or other convenient localities can be arranged for almost any Saturday by telephoning the Museum in advance. For those who cannot go into the country the city affords a more interesting field for bird observation than is generally supposed, as our growing list of city species shows. The dates of arrival of summer residents are desired for the city as well as the country and all members of the Society should report the first date on which they observe the Chimney Swift, Rain-crow, Beebird, Orchard Oriole, Nonpareil, Summer Tanager, etc.

APPEAL OF ARCHAEOPTERYX TO THE NATURAL HISTORY SOCIETY

By Another Fossil

I'm just an Archaeopteryx, and sadly out of date;
My present habitation is the Solenhofen slate.
I used to have a cosy nest and laid my eggs by sixes;
And there in peace I raised my little Archaeopteryxes.
I'm asking for your sympathy because I've lately heard
That you're always kind and helpful to a persecuted bird.
I saw it in a fossil sheet that sometimes comes my way—
"The Paleozoic Herald"—that I read the other day.
We had never any trouble in those old Jurassic times,
For we hadn't any enemies to hate us
 And we never were afraid
 That the millinery trade
Would be likely ever to exterminate us.
 The youthful Cain and Abel
 Did'nt shoot us for the table
With a prehistoric sling-shot or a bow—Ah!
 And the lady's Easter bonnet
 Didn't have a feather on it,
Nor a whole stuffed Ichthyornis nor a Moa!
Now the reason for this happy state you hardly will believe,
Why there was'nt any Adam, and there was'nt any Eve!
And yet we have a grievance, and a bad old grievance too,
And we need your help, dear ladies, all the same;
For I'm sure you will agree with me that it will never do
To be nothing of a bird except the name,
 And I would'nt have you think
 That I'm just a missing link
In developing the plan of evolution!
 If I had'nt any gizzard
 Does that prove that I'm a lizard
With an unknown transmogrific constitution?

I'm nothing but a fossil in a lithographic stone,
And my jaws are full of teeth, and my tail is mostly bone,
But you never would have thought that I was any other thing
Than a bonnie little birdie, if you 'd only heard me sing!
While my lovely mate was sitting on her eggs the livelong day,
I would perch upon a giant fern and warble out a lay
To cheer her weary waiting till the chicks began to cheep,
Or to soothe our teething birdlings when they could'nt go to
sleep.

It's bad enough to be a bird with such a beastly name,
And it's worse to be a fossil, but it's just a burning shame
For those scientists to link us
With that ugly Rhamphorynchus
Whose nasty bones are lying by my side,
With his bat-like leathern wings,
And his paddle-tail and things,
And not a blessed feather on his hide!
Now if you go to Berlin you may see my pretty mate
With feathers on her wings and tail, still showing in the slate,
Of softest green—"invisible"—but if she only knew
What I know of this trouble, she would certainly be blue!
For there is'nt any doubt,
That they mean to wipe us out,
Like the Dodo, and the Moa, and the Auk;
But I'm asking to be heard
Because I mean to be a bird,
Just as much as Hesperornis in the Chalk.
So here I rest my case, dear friends; please help me if you may!
And your fossilised petitioner will ever humbly pray, &c.

Rev. ROBERT WILSON, D. D.

NOTES FROM THE MUSEUM

Work on our new building has progressed steadily if not rapidly. Most of the heavy work was completed under last year's appropriation and funds are now available for finishing the lecture room, library, offices, work rooms and electric wiring. This will be finished this spring and many of the collections will be transferred during the summer. The old building is still open to visitors at the usual hour but many specimens have been withdrawn from exhibition in preparation for removal.

Among recent accessions may be mentioned a canvas-back and a ring-necked duck, both rare species, taken by Mr. E. H. Burton, a golden pheasant, presented by Mr. W. V. McDowell, and a blue-winged paroquet, (*Palaeornis columboides*), not represented in our collection and opportunely presented by Mr. O. F. Reenstjerne, just as the paroquets were undergoing revision. The Museum has also received from Rev. C. M. Gray a number of specimens of the black rat (*Mus rattus*) which has been almost exterminated by the more recently introduced brown rat (*M. norvegicus*).

Professor Rea will give a public lecture under the auspices of the Memminger Alumnae Association in Manigault Hall, Tuesday evening, April 14. The lecture will describe the treasures of the Charleston Museum and what they mean to the people.

Several classes from the public schools have visited the Museum recently and have either been granted the use of lecture room and specimens for work under the direction of their teachers or members of the staff have given descriptive talks. The Director is desirous of seeing this use of the Museum extended and will be glad to consult with other teachers who are interested.

BULLETIN
OF
THE CHARLESTON MUSEUM

EDITED BY
PAUL M. REA

APRIL BIRD LIFE OF OTRANTO
NOTES FROM THE MUSEUM

The Charleston Museum

UNDER THE AUSPICES OF THE COLLEGE OF CHARLESTON

Director

PAUL M. REA

Assistants

F. W. WAMSLEY

HERBERT R. SASS

Librarian

Honorary Curators

WM. G. MAZYCK.....	<i>Conchology</i>
DANIEL S. MARTIN.....	<i>Geology</i>
ARTHUR T. WAYNE.....	<i>Ornithology</i>
NATHANIEL W. STEPHENSON.....	<i>Art</i>

Student Assistants

HENRY LAURENS	<i>Zoology</i>
J. WIRRON WILLSON.....	<i>Ornithology</i>

THE CHARLESTON MUSEUM was in existence as early as 1777 under the auspices of the Charleston Library Society, was transferred to the Literary and Philosophical Society of South Carolina in 1815, to the Medical School in 1843, and to the College of Charleston in 1850. In 1907 a building was provided by the City and the name changed to The Charleston Museum.

The Museum is dependent upon dues from members and private subscriptions for all permanent improvements, for increase of the collections, and for maintenance of its educational and scientific work.

The membership fees are:—

ANNUAL MEMBERS.....	\$ 10	PATRONS.....	\$ 500
SUSTAINING MEMBERS.....	25	BENEFACTORS.....	1000

The privileges of members include admission on pay days, tickets to members' lecture courses, and copies of Museum publications.

THE BULLETIN OF THE CHARLESTON MUSEUM is published monthly, from October to May, by the Museum and is entered at the Post Office at Charleston, S. C., as second class matter.

BULLETIN

OF

THE CHARLESTON MUSEUM

VOL. 4 CHARLESTON, S. C., APRIL, 1908 No. 4

APRIL BIRD LIFE OF OTRANTO

The country bordering Goose Creek in the neighborhood of Otranto has been from time immemorial a paradise for sportsmen. Ducks have always been more or less plentiful on the creek, deer range freely through the swamps and abandoned grass-grown fields, "partridges" are abundant, and turkeys by no means rare, so that the members of the two hunting clubs which control some thirty thousand acres about Otranto can always enjoy good sport. Now it is generally true that a sportsman's paradise is also a paradise for the field ornithologist: and I doubt whether it would be possible to find within a radius of twenty miles from Charleston a region more interesting to the bird-student than this Otranto country bordering what was formerly Goose Creek.

Except in name, Goose Creek no longer exists. The building of a water-works dam about four years ago some four miles below Otranto backed up the water of the creek, causing it to overflow its low, marshy banks and spread far and wide over the face of the country. Instead of the deep, narrow, tidal stream which formerly wound past Otranto, there is now an immense reservoir covering thousands of acres of what used to be marsh, field, and forest. In some places,

the surface of this great body of standing water is clear and open. In other places, it is covered by floating islands, almost firm enough to bear a man's weight, of tall reeds and wide-spreading aquatic plants; while in those parts of the reservoir which used to be densely wooded swamp lands, the tall tree-trunks spring straight upward from the water—the cypresses still alive and flourishing, but the pines dead and rapidly decaying. The fresh, wine-colored water breeds myriads of insects and is alive with fish and frogs, and consequently many aquatic and swamp-living birds have found in this huge reservoir an ideal home. Through the kindness of a member of the Goose Creek Club who has accompanied me on my trips, I have been able recently to spend three days (April 4th, 13th, and 20th) in this most interesting locality and to investigate, as well as I could in so short a time, its wonderfully varied feathered population.

The most conspicuous if not the most abundant of the reservoir's avian inhabitants are the Coots and Florida Gallinules. The flooded lands are alive with these birds, swimming about among the floating islands of vegetation, spluttering noisily over the water, or now and then making short flights from place to place—and, all the while, uttering an endless variety of outlandish noises sounding sometimes like loud scornful laughter, at other times resembling the groaning or whimpering of a child in pain. Whether both Coots and Gallinules are responsible for these sounds we could not determine, though I think one species is as noisy as the other. Both are rather wild, keeping usually well out of gunshot, and yet not so wild as to render observation at all difficult. The glistening white bill of the Coot and the bright red bill and frontal shield of the Gallinule are excellent field marks, so that, in spite of the striking similarity of the two species in form and habits, we had no difficulty in distinguishing between them. We seldom saw either Coots or Gallinules in the stretches of open water or in the

flooded forest. The reed-grown edges of the reservoir and the numberless floating islands of green, water-nourished plants are their chosen hunting-grounds; and there, a little later in the season, hundreds of tiny downy Gallinules will take their first look at the great watery world which is to be their future home. The Coots breed further northward, apparently preferring a cooler climate in which to rear their young. Nevertheless, as late as April 20th, they were still abundant in the reservoir, even more numerous, I think, than their red-billed kinsmen; and it is hard to believe that, two weeks later, the last Coot will, in all probability, have departed.

In the flooded timber about the upper reaches of the reservoir, we saw on April 13th, for the first time, that fantastic inhabitant of deep, gloomy swamp-lands, the Snake Bird or Anhinga. Paddling silently in and out among the tree-trunks, pulling the punt along by means of overhanging branches or protruding "snags", we managed several times to approach within range of the Anhingas as they perched in silence in the tops of the tall dead trees, preening their feathers and twisting their long necks from side to side. Never was a bird more appropriately named. The Snake Bird's slender neck is as long and sinuous as the body of a snake: and, when one sees the bird on the wing, the appropriateness of its local name, Water Turkey, is instantly apparent, the bird's manner of flight suggesting immediately that of the Wild Turkey. Although they kept, for the most part, to the tops of the tall trees, the Anhingas were by no means shy when we paid them our first visit on April 13th. We were anxious to secure a female for the Museum and fired several times, though without result. Twice, after a shot, the birds circled around quite near the boat, and almost always, after being startled, they flew only a short distance and alit again in plain view, their appearance, as they perched in the tall leafless trees, being fantastic in the

extreme and thoroughly in keeping with the dying, flooded forest which they inhabit. The male birds showed black as ink against the sky, except when their white-streaked backs were turned towards us, while the beautiful yellow-fawn color of the females' head, throat, and upper breast was clearly distinguishable even at a distance of one or two hundred yards. On April 20th, when we made a second vain attempt to secure a female, we found them much more difficult to approach and were obliged to keep carefully concealed and to make as little noise as possible, as we pushed and pulled the punt over the deep dark-colored water which hid the submerged forest-floor.

It is hard to say how large is the colony of Anhingas which has its summer headquarters in the flooded lands near Otranto. Probably the birds are not numerous, though it may be that others inhabit other parts of the reservoir which we have not yet explored. At all events, it is interesting to know that a colony is established within a half-hour's ride by rail from Charleston. The birds will undoubtedly breed in the reservoir and probably they will enjoy a successful season, since these Goose Creek lands form part of a game preserve.

The flooded forest where we found the Anhingas is also the hunting ground of innumerable woodpeckers who find food in plenty under the loose, peeling bark of the dead pines. The big Pileated Woodpecker or "Old Kate"—the rarest of its family in most parts of the coast country—is here the commonest species, hammering noisily on the upper branches of the decaying pines and uttering continually the loud, high-pitched laugh with which it is accustomed to greet its fellows. The trees are full of large round holes probably made by the "Old Kates", and the birds must at present be laying or incubating their eggs, though we saw none of them entering or leaving the holes.

In the more open parts of the flooded woodlands, where

willows, cypresses, and other water-loving trees outnumber the gaunt dead pines, we found the beautiful Prothonotary Warbler abundant. On my first trip, on April 4th, I saw but two Prothonotaries, but on April 13th they were present in hundreds and on April 20th they had begun to nest, since I saw a female with a bunch of pine-straw or fine grass-blades in her bill. They were the most numerous as well as the most beautiful of the warblers seen in the flooded woods and thickets, though Parulas and Yellow-throated Warblers were quite as abundant as they are at this season in ordinary swampy woods; and on April 13th, in spite of the dark rainy weather, the Prothonotaries were in full song, their shrill, far-carrying notes ringing out from the tops of the pines and cypresses as well as from low willow branches within two or three feet of the water. A moment ago I said that these gorgeous orange-yellow Prothonotaries were the handsomest warblers observed, but I had forgotten two Myrtle Warblers seen on April 20th. In anticipation of their coming journey to the far north, the latter had assumed their splendid spring livery of vivid yellow and jet black and would hardly have been recognized as the same soberly-dressed little birds so abundant in town and country throughout the winter. The Prothonotaries, however, were the warblers which interested us most. Myrtles, Parulas and Yellow-throated Warblers may be as handsome and certainly the Yellow-throated, at any rate, is a superior songster; but these are common inhabitants of every woodland round about Charleston, while to find the Prothonotary in abundance one must penetrate the deep swamps.

Astonishing and almost confusing in its volume and variety is the bird-music to be heard in most portions of the flooded lands and in the woods and thickets around their edges. In the tall reeds and among the floating islands of aquatic plants, the weird laughing and pitiful whimpering of the Coots and Gallinules, the shrill "Skeow" of Green Herons,

the dismal gurgling of Florida Grackles, and the musical "Kon-que-ree" of Red-winged Blackbirds continue all day with scarcely a pause. Around the more open reaches, scores of Kingbirds perch on the tops of the scattered dead bushes and trees, screeching incessantly between successful sallies after passing insects and making noisy assaults upon the Purple Martins which skim back and forth above the surface of the water, now and again uttering their full, flute-like notes. Prothonotaries, Parulas, Yellow-throated Warblers, Southern Yellow-throats, Red-eyed and White-eyed Vireos, Tufted Titmice, Gnatcatchers, Brown-headed Nuthatches, and an occasional Cardinal or Carolina Wren join in one grand chorus among the green willows and feathery cypresses, while, high overhead in the leafless decaying pines, the jovial "Old Kates" laugh noisily, drowning for the moment the low, complaining voices of Red-bellied Woodpeckers and Florida White-breasted Nuthatches and the clear, staccato whistles of Southern Hairy and Southern Downy Woodpeckers. These that I have mentioned are the principal performers to be heard actually in the flooded lands: but there are several others who seem, for some reason, to avoid the trees and reeds of the reservoir, but whose voices are heard continually from the woods around its edges. Chief among these are clear-toned, spirited Orchard Orioles, mellow-voiced Summer Tanagers, and boisterous Crested Flycatchers. In the dry woodlands the Crested Flycatchers especially are exceedingly abundant, and it is difficult to explain their absence from the thinly wooded parts of the reservoir, where their kinsmen, the Kingbirds reap so bounteous a harvest of dragon-flies and other winged insects.—unless it be that the autocratic Kingbirds do not desire their presence. Once, as we paddled along in silence close to the shore, we heard the hoarse calling of a Wild Turkey gobbler and the plaintive oft-repeated answers of two Turkey hens among the green thickets close at hand:

and a little later, two Great Horned Owls began to answer each other in the distance, their deep, menacing notes sounding not altogether unlike the barking of a pair of ill-tempered, bass-voiced dogs.

In so short an article as this I can describe only the more striking features of the bird-life of the flooded lands. Lack of space forbids the enumeration of all the species observed during the three days spent in this locality—eighty-one in all—but there are a few others, in addition to those already mentioned, which are perhaps worthy of notice. The beautiful Wood Duck, or Summer Duck is common, especially in the dead timber, and must be breeding as the birds were almost always seen in pairs. Two American Egrets were seen on April 13th flying in company with four Great Blue Herons, and both these species probably breed in this locality. The Pied-billed Grebe or Dabchick inhabits the reservoir in small numbers and must certainly be breeding, though we failed to discover a nest. As my visits took place during the season when many of the summer residents of this region are arriving from further south, I was able to form some idea of the time of coming of these species to Otranto. The Anhinga was first noted on April 13th, but had probably arrived much earlier. The Least Bittern and American Egret were observed on April 13th but were not seen on the 20th. Two Nighthawks were seen on the 13th, while on the 20th the birds were quite common towards sunset. The Hummingbird, first noted on the 4th, was still rare on the 13th, but common on the 20th. A single Kingbird was seen on the 4th, while on the 13th scores were observed, the birds associating in pairs. Crested Flycatchers, absent on the 4th, were common on the 13th. The Wood Pewee was first noted on the 20th, but was then very common and had evidently arrived some days previously. Summer Tanagers were common on April 13th and 20th, but had not arrived on the 4th. Red-eyed Vireos were already common on the 4th.

The Prothonotary Warbler, rare on the 4th, was exceedingly abundant on the 13th. The Nonpareil, which arrived in Charleston on the 16th. was very rare at Otranto on the 20th, only one individual being observed. The Hooded Warbler and Yellow Palm Warbler were observed on April 4th, but were not noted on either of my subsequent visits. The Orchard Oriole, which arrived in Charleston on the 10th, was rather rare at Otranto on the 13th. The earlier migrants, such as the Osprey, Chimney Swift, and Purple Martin, were, of course, already common at Otranto on the 4th, but it is a curious fact that the Chuck-Will's-Widow, which must have arrived during or before the last week of March, was not heard on April 4th, though it was exceedingly common on the evening of the 13th.

HERBERT R. SASS.

NOTES FROM THE MUSEUM

The lecture of the Director on the evening of April 14th, on "The treasures of the Charleston Museum and what they mean to the people," delivered at the request of the Memminger Alumnae Association, was well attended and aroused wide-spread interest. Commenting on the fact that this was probably the last lecture to be delivered in Manigault Hall, the Director referred to the first lecture delivered by him some three years ago when Manigault Hall was opened to the public. He compared the plans of the Museum as reviewed at that time with the work actually accomplished during the past three years and outlined the Museum's future work after the transfer to the new building. Several of the Museum's rarest and most valuable specimens were exhibited to show the sad deterioration which they have suffered in the past due to lack of funds and of proper accommodations. The Director spoke most hopefully, however, of the present prospects of the Museum, while, at the same time, urging the importance of more adequate financial support of the institution by the people.

BULLETIN
OF
THE CHARLESTON MUSEUM

EDITED BY
PAUL M. REA

PREPARATION OF MUSEUM EXHIBITS
THE SNOWY HERON IN SOUTH CAROLINA
NOTES FROM THE MUSEUM

Volume IV, Number 5

MAY, 1908

The Charleston Museum

UNDER THE AUSPICES OF THE COLLEGE OF CHARLESTON

Director

PAUL M. REA

Assistants

F. W. WAMSLEY

HERBERT R. SASS

Librarian

Honorary Curators

WM. G. MAZYCK.....	<i>Conchology</i>
DANIEL S. MARTIN.....	<i>Geology</i>
ARTHUR T. WAYNE.....	<i>Ornithology</i>
NATHANIEL W. STEPHENSON.....	<i>Art</i>

Student Assistants

HENRY LAURENS	<i>Zoology</i>
J. WIRRON WILLSON.....	<i>Ornithology</i>

THE CHARLESTON MUSEUM was in existence as early as 1777 under the auspices of the Charleston Library Society, was transferred to the Literary and Philosophical Society of South Carolina in 1815, to the Medical School in 1843, and to the College of Charleston in 1850. In 1907 a building was provided by the City and the name changed to The Charleston Museum.

The Museum is dependent upon dues from members and private subscriptions for all permanent improvements, for increase of the collections, and for maintenance of its educational and scientific work.

The membership fees are:—

ANNUAL MEMBERS.....	\$ 10	PATRONS.....	\$ 500
SUSTAINING MEMBERS....	25	BENEFACTORS.....	1000

The privileges of members include admission on pay days, tickets to members' lecture courses, and copies of Museum publications.

THE BULLETIN OF THE CHARLESTON MUSEUM is published monthly, from October to May, by the Museum and is entered at the Post Office at Charleston, S. C., as second class matter.

BULLETIN

OF

THE CHARLESTON MUSEUM

LIBRARY
NEW YORK
BOTANICAL
GARDEN

VOL. 4 **CHARLESTON, S. C., MAY, 1908** **No. 5**

PREPARATION OF MUSEUM EXHIBITS

A brief review of the reorganization of the museum collections which has occupied a large part of the time of the staff during the past three years was printed in the March issue of the BULLETIN. This reorganization has included the gathering of all the smaller specimens into storage cases, their systematic arrangement and the restoration, so far as possible, of the data which had been confused or lost in the vicissitudes of more than a century, together with the compilation of adequate records. This work is a necessary preliminary alike to the removal of the collections to the new building and to their utilization in exhibits and study series. As these pages go to press, the removal to the new building is beginning. It will consist first in the transfer of the library, storage cases, offices and workrooms, and then of the larger exhibits as cases are prepared to receive them. The installation of the library in larger quarters, permitting all the books to be brought together in order for the first time, and the opening of a public reading room will constitute a gratifying advance in equipment. The first exhibits to be prepared will include a new and extensive collection of living reptiles, the local bird collection for the use of the Natural History Society, and the be-

ginning of economic and industrial exhibits. Much of the summer will, however, be occupied with cataloging which has been crowded out of the busy winter months and with construction which must be carried on by the staff for want of adequate funds. At best the preparation and installation of exhibits must proceed slowly and it therefore seems desirable to fulfill the promise made in the March article and describe the work of preparing and installing exhibits in order that the friends of the Museum may appreciate the labor involved.

It has been well said that to write a good label one should be able to write a book about the subject in question. The first step, then, in preparing exhibits is to become thoroughly familiar with all aspects of the subject. This requires many books and is one of the reasons for the care which a museum expends upon its library. Books alone are not enough, however, for without extensive analytical catalogs the quest for information is like the proverbial search for the needle in the haystack, and so the constant need for the services of a librarian is explained. Having become thoroughly informed upon the subject in hand, it is necessary to examine the storage collections (which must obviously be systematically arranged and conveniently accessible) and to determine how many and what specimens can be shown in the exhibit to advantage. The success of an exhibit depends largely upon the unity and directness of its plan and a superabundance of specimens serves only to confuse the point which the exhibit is intended to show. The entire lack of storage facilities in our present building has necessitated exhibition of confusing masses of material to the exclusion of instructive and pleasing exhibits.

Having selected the specimens which will best illustrate the subject in hand, one must decide how much or how little to say on the labels. Think of the heterogeneous thousands who will come to this exhibit and with what

varied purposes and then try to make your labels say what the greatest number will wish to know and to say it so simply, vividly, and briefly that a reasonable number of these people will read it and carry away some new idea. Label writing is not a simple matter and, even when the specimens are selected and the labels composed, there remains a process of exhibit making which may make or mar success in itself, *viz*: installation. Successful cases must be so constructed as to present the exhibit conveniently and agreeably to the eye, while at the same time affording adequate protection against the entrance of dust and insects. Small objects must be within eighteen inches of the front of the case to be easily seen and not less than eighteen inches nor more than six feet from the floor. Vertical cases conforming to these requirements are well adapted to rooms lighted from above as in our new building but, with side lighting, reflections from the surface of the glass render the contents of the cases well nigh invisible, as in so many of our present exhibits. Cases of table form or with inclined tops bring the specimens conveniently close to the eyes and are of much use when reflections can be avoided. Plate glass in large sizes forms the only satisfactory case front, but its expense is frequently prohibitive and it will unfortunately be necessary for us to use again much of the sash in our old cases, in spite of the fact that it was built to fit the space in the old building and is far from uniform in size. The larger specimens can hardly be exhibited at all until new cases can be provided. The effectiveness of exhibits is greatly enhanced by a background of harmonious and permanent color and the diversity of colors to be seen in the best museums is an indication of the difficulty of this problem.

Among the last steps in the installation of exhibits is the printing of the labels and here the most tasteful and painstaking care is required to produce effects so pleasing as to invite the perusal of casual visitors. So exacting is this work

that job printers are unable to do it economically when only two or three impressions of each label are required and all the larger museums find it necessary for economy and efficiency to do their own label printing. The Charleston Museum will be unable to install its exhibits properly until a small printing outfit is obtained.

Many exhibits, when once installed, require little further attention and such are usually enclosed in cases as nearly dust and insect proof as possible. The expansion and contraction of the air with changes in temperature and barometric pressure require, however, the use of ventilators and these must, of course, be made proof against both dust and insects. Other exhibits require frequent changing, *i. e.* our seasonal collection of local birds, and these must be provided with easily removable fronts.

It is evident from the above account that a close adaptation of cases to exhibits is necessary, yet in the long process of installing a large museum it is seldom possible to follow exactly a pre-arranged plan and many temporary expedients are necessary. We would like to install all our collections and then invite the public to an opening celebration because it would give them an entirely new conception of the extent and interest of the Museum, but, after all, the installation ought never to be completed and we believe the public will take a deeper interest in watching the gradual growth of the Museum. It is to stimulate this interest that these descriptions of the technical side of museum work are printed.

THE SNOWY HERON IN SOUTH CAROLINA

Bird-lovers and ornithologists everywhere will be glad to learn that in South Carolina, at any rate, the Snowy Heron (*Egretta candidissima*) is regaining some of its lost ground. The pathetic history of this most beautiful of the herons is familiar to most of our readers. Twenty-five years ago it was an abundant species in the South: but the graceful recurved "aigrettes" which it assumed during the nesting season caused its rapid and almost complete extermination at the hands of plume-hunters, so that to-day it is by far the rarest of its family. On the South Carolina coast, where formerly it bred in thousands, it was believed to be almost if not absolutely extinct: and it is, therefore, with peculiar pleasure that the Museum is able to announce the discovery that the Snowy Heron has begun to re-establish itself in this region and that two strong breeding colonies now exist on this coast.

On May 15, I set out in a launch on an exploring trip among the marshes and sea islands in search of the nesting grounds of beach and marsh birds in the interest of the South Carolina Audubon Society and of the Museum. On this trip, the two breeding colonies of the Snowy Heron referred to above were discovered. On May 22, through the kindness of a friend of the Museum who provided a large launch and accompanied us on the trip, Prof. Rea, myself, some of the members of the Natural History Society, and some friends who were interested, revisited the heronries and investigated them more thoroughly. The first heronry discovered is on a small island or "hammock," completely surrounded by marsh and covered with "sparkleberry" bushes, yuccas, and palmettoes. The number of Snowy Herons found here is estimated at between one hundred and one hundred and fifty. Associated with the Snowies were hundreds of Louisiana Herons and Green Herons, as well as a considerable number of Black-

crowned Night Herons, the total population of the colony being probably between six hundred and seven hundred birds.

The second heronry, which is probably at least ten miles distant from the first "as the crow flies," occupies a similar but larger hammock. Here the number of herons breeding is estimated at not less than one thousand, of which at least two hundred are Snowies. Here also the Louisianas are the most numerous, while Green Herons are present in hundreds, and Black-crowned Night Herons are abundant.

The hundreds of nests, most of which contained eggs or young in various stages of development, are placed in the "sparkleberry" bushes, yuccas, and palmettoes, most of them within easy reach from the ground. Although these two colonies have evidently been free for some time from serious molestation, it is extremely desirable that immediate steps be taken to ensure their future protection against the unscrupulous enemy who has so nearly succeeded in blotting the Snowy Heron out of existence; and it is hoped that definite measures for their protection will result through the co-operation of the Museum with the South Carolina Audubon Society. So relentless has been the war of extermination which has been waged against this beautiful species during the last quarter of a century that its reappearance as a breeding bird on this coast is as surprising as it is gratifying. If the laws protecting it can be enforced and if the islands where it breeds can be guarded carefully during the nesting season, there is no apparent reason why the Snowy Heron should not increase steadily in numbers and become once more a familiar inhabitant of our marshes.

HERBERT R. SASS.

NOTES FROM THE MUSEUM

At the meeting of the Natural History Society on May 7, the following officers were elected: President, Mrs. Paul M. Rea; Vice-President, Miss Annie Sloan; Secretary, Mr. Henry Dotterer; Treasurer, Mr. Herbert R. Sass. The past year has been a most successful one for the Society. Its membership has increased considerably, it has accomplished more notable results, and its prospects for the future are brighter than ever before. The last regular meeting of the Spring was held May 21, and was devoted to a review of the breeding records made by the Society, and to plans for summer work. Formal meetings will not be resumed until October but members will meet informally on the first and third Thursdays of each month for discussions of work.

An interesting recent occurrence was the capture on April 9th of a Least Bittern (*Ardetta exilis*) in Mr. Prioleau Ravenel's garden on Tradd Street. This bird is a common summer resident of the marshes about Charleston, but its presence in the city, where it has been observed only once before, is indeed remarkable. Three individuals were seen in Mr. Ravenel's garden but unfortunately the captor of the specimen referred to above was a cat and not a human being, so that only a few fragments could be preserved.

The collection of living reptiles is increasing, through the generosity of a friend of the Museum. The snakes now in the collection include at least twelve distinct species, ranging from the deadly "Diamond-back" to the slender, harmless Garter snake. The lizards are represented by the so-called "glass snake" and by three specimens of the Gila monster, the only poisonous lizard in the country. These interesting animals will be placed on exhibition after the opening of the new building.

The Director, Prof. Rea, attended the third annual meeting of the American Association of Museums in Chicago, May

5-7. The Charleston Museum is a charter member of the Association of which Prof. Rea is Secretary; and through the meetings of the Association, which are attended by representatives of the leading museums of the country, the Director is able to keep in touch with modern methods and ideas concerning every phase of museum work.

A public lecture on "The Art of Illustration" was given in Manigault Hall, Thursday afternoon, May 28, by the honorary curator of art, Mr. N. W. Stephenson. This lecture served as an introduction to an exhibit of twenty etchings, executed in Charleston by Mr. Charles Henry White. Six of these were reproduced in the October issue of Harper's Magazine, but lost so much of their sharpness of line in the half-tone process as to convey a very faint idea of the beauty of the originals. This exhibition will continue until Thursday, June 4, through the courtesy of Mr. White.

As these pages go to press we take pleasure in announcing a promise from a friend of the Museum of twenty-five popular nature books for the new public reading room. While the library was maintained chiefly for the use of the staff the technical works were most sought, but we wish now to add more popular books and journals which will make the reading room attractive to the public—especially to school children.

With this issue the BULLETIN takes leave of its readers until October. The summer months will be devoted to much routine work as well as to settling the new building and in the fall the Museum hopes to have its work better organized and its advantages more accessible to its friends.

BULLETIN
OF
THE CHARLESTON MUSEUM

EDITED BY
PAUL M. REA

THE MUSEUM LIBRARY
THE NATURAL HISTORY SOCIETY
NOTES FROM THE MUSEUM

The Charleston Museum

UNDER THE AUSPICES OF THE COLLEGE OF CHARLESTON

Director

PAUL M. REA

Assistant

HERBERT R. SASS

Librarian

Honorary Curators

WM. G. MAZYCK.....	<i>Conchology</i>
DANIEL S. MARTIN.....	<i>Geology</i>
ARTHUR T. WAYNE.....	<i>Ornithology</i>
NATHANIEL W. STEPHENSON.....	<i>Art</i>

THE CHARLESTON MUSEUM was in existence as early as 1777 under the auspices of the Charleston Library Society, was transferred to the Literary and Philosophical Society of South Carolina in 1815, to the Medical School in 1843, and to the College of Charleston in 1850. In 1907 a building was provided by the City and the name changed to The Charleston Museum.

The Museum is dependent upon dues from members and private subscriptions for all permanent improvements, for increase of the collections, and for maintenance of its educational and scientific work.

The membership fees are:—

ANNUAL MEMBERS.....\$ 10	PATRONS\$ 500
SUSTAINING MEMBERS..... 25	BENEFACTORS 1000

The privileges of members include admission on pay days, tickets to members' lecture courses, and copies of Museum publications.

THE BULLETIN OF THE CHARLESTON MUSEUM is published monthly, from October to May, by the Museum and is entered at the Post Office at Charleston, S. C., as second class matter.

BULLETIN

OF

THE CHARLESTON MUSEUM

VOL. 4 CHARLESTON, S. C., OCTOBER, 1908 No. 6

THE MUSEUM LIBRARY

The installation of the Museum Library in its commodious quarters in the new building and the extension of its facilities to the general public through the new Reading Room which is to be formally opened on October 31st., form an appropriate occasion for a brief sketch of the development of this department of the Museum's work.

The Library is entirely the product of the past five years and it is significant that not only was this the first feature of the Museum to receive attention when plans for more active work were made, but it is also the first department to be installed in the new building and opened to the public. The reason for this is that without extensive and well-ordered library facilities the work of the staff is hampered at every turn, while to the general public the Museum fails to afford the means of acquiring that information and entertainment in connection with the exhibits which it is one of the fundamental objects of an educational Museum to provide. It is also note-worthy that this is the first free public reading room in the city.

Five years ago the available scientific literature was distributed between the libraries of the Charleston Library Society,

the College of Charleston, the defunct Elliott Society, the Medical Society, and private libraries throughout the city. So much time was required to determine whether any particular book might be found in these various collections that the Museum began a card catalog of the books pertaining to its work in these various libraries. During the first year this cataloging was done by the Director; in the second year Mrs. Paul M. Rea volunteered for the work; then for two years it was possible to employ for six hours per week the College Librarian, Miss Frances Jervey; while in the past year Mr. H. R. Sass of the staff has acted as librarian.

During this time a real library has been created in the Museum. The nucleus was found in the books on biology and geology in the College of Charleston Library. These were deposited in the Museum by the College and included, besides many rare old books, nearly complete series of important government publications. New books were at first obtained by the department of biology and geology in the College, but gradually the Museum became able to purchase from time to time, and through the publication of the BULLETIN obtained many valuable exchanges from other museums.

For a long time there seemed no hope of obtaining the past or present publications of important learned societies here and abroad. Then an arrangement was concluded whereby the Museum became the custodian of the Elliott Society library containing long, but unfortunately often incomplete, series of just this character and as soon as the Museum has funds for publication of research papers these exchanges can be permanently continued.

As an indication of the present scope of the library the following list of learned societies whose publications are now on the shelves, is of interest.

PUBLICATIONS OF LEARNED SOCIETIES
IN THE MUSEUM LIBRARY

- American Association for the Advancement of Science, *Proceedings*
American Chemical Society, *Journal*
American Museum of Natural History, *Bulletins, Journal, Annual Reports*
American Philosophical Society, *Proceedings*
Boston Society of Natural History, *Memoirs, Proceedings, Occasional papers*
Bristol Naturalists Society, *Proceedings*
Brooklyn Conchological Club, *Bulletin*
Brooklyn Institute Museums, *Museum News, Annual reports*
Buffalo Society of Natural Sciences, *Bulletin*
California Academy of Science, *Bulletin, Occasional papers*
Chicago Academy of Sciences, *Proceedings, Transactions, Annual reports, Bulletins of Geological and Natural History Survey*
Connecticut Academy of Arts and Sciences, *Transactions*
Connecticut State Geological and Natural History Survey, *Bulletins, Reports*
Davenport Academy of Natural Science, *Proceedings*
Detroit Museum of Art, *Bulletin*
Elisha Mitchell Scientific Society, *Journal*
Elliott Society of Science and Art, *Proceedings, Journal, Etc.*
Essex Institute, *Proceedings, Bulletin, Reports*
Field Museum of Natural History, *Reports*
Folkestone Natural History Society, *Proceedings*
Geological Society of Dublin, *Journal*
Geological Survey of Alabama, *Publications*
Geological Survey of New Jersey, *Publications*
Geological Survey of South Carolina, *Publications*
Historical and Scientific Society of Manitoba, *Transactions, Reports*
Indiana Academy of Science, *Proceedings*
Indiana Dept. of Geology and Natural Resources, *Annual Reports*
John Crerar Library, *Publications*
Johns Hopkins University, *Circulars, Etc.*

L'Academie imperiale de Dijon, *Memoirs*
 Linnean Society of London, *Journal*
 Louisiana State Museum, *Report and Catalog*
 Manchester Geographical Society, *Journal*
 Manchester Literary and Philosophical Society, *Memoirs and
 Proceedings*
 Maryland Geological Survey, *Publications*
 Metropolitan Museum of Art, *Bulletin, Annual reports*
 Milwaukee Public Museum, *Annual reports*
 Minnesota Academy of Natural Sciences, *Bulletin*
 Missouri Botanic Garden, *Reports*
 Montreal Natural History Society, *Proceedings*
 Museum of Comparative Zoology at Harvard College, *Bulletin,
 Memoirs, Annual reports*
 National Academy of Science, *Memoirs*
 Natural History Society of New Brunswick, *Bulletin*
 New York Academy of Sciences, *Annals, Memoirs, Transactions*
 New York Botanical Garden, *Bulletin*
 New York Microscopical Society, *Journal*
 North Staffordshire Field Club, *Annual report and Transactions*
 Nova Scotian Institute of Sciences, *Proceedings and Trans-
 actions*
 Peabody Museum at Harvard College, *Memoirs, Etc.*
 Pennsylvania Museum, *Bulletin*
 Philadelphia Academy of Natural Sciences, *Proceedings, Annual
 reports*
 Portland Society of Natural Science, *Proceedings*
 Royal Dublin Society, *Proceedings, Transactions*
 Royal Irish Academy, *Proceedings, Transactions*
 Royal Society of London, *Proceedings, Miscellaneous reports*
 Smithsonian Institution, *Annual reports, Contributions to knowl-
 edge, Miscellaneous collections*
 South Carolina Medical Association, *Journal*
 Springfield Museum of Natural History, *Reports*
 Staten Island Natural Science Association, *Proceedings*
 St. Louis Academy of Science, *Transactions*
 U. S. Bureau of Fisheries, *Bulletins, Annual reports*
 U. S. Dept. of Agriculture, *Publications*

U. S. Geological Survey, *Bulletins, Monographs, Professional papers, Annual reports*
U. S. National Museum, *Proceedings, Bulletins, Annual reports, Contributions from the National Herbarium*
U. S. Weather Bureau, *Monthly weather review, Daily weather maps*
University Geological Survey of Kansas, *Publications*
University of Kansas, *Science Bulletin*
University of Pennsylvania, *Contributions from the botanical laboratory*
Wisconsin Natural History Society, *Bulletin*
Zoological Society of London, *Proceedings, Reports*
Zoological Society of Philadelphia, *Reports*

The needs of the library are stated in the report of the Director for 1907, as follows:

“The library now needs an author catalog, extensive analyzing, and money for binding; but more than all it needs the entire time of a trained librarian. The present arrangement seriously encroaches upon the time of a member of the staff who is needed for other work. Moreover, merely the routine work of the library is accomplished and its efficiency is very low in proportion to its possibilities. The library is already too large to be safely entrusted to an untrained recruit and finally, in the new building the growing work and the opening of a public reading room make it imperative that immediate provision be made to secure a competent person as librarian.”

With the growth of the library it has been increasingly desirable that its facilities should be extended to the general public and especially to the children in our schools. It is with much satisfaction, therefore, that the Director announces the formal opening of a public reading room on Saturday October 31st. On this occasion a silver tea will be given from four thirty to seven o'clock, at which a general gathering of the friends of the Museum is desired. The proceeds of the tea will be devoted to the equipment of the library.

The reading room adjoins the stack room of the library and is provided with suitable reading tables, magazine rack, shelves for books of reference, new books, and especially children's books. Beginning in November the reading room will be open every Saturday. In the absence of a regular librarian the following ladies have generously volunteered to assist the staff as attendants;—Miss May Taylor, Miss Mabel Webber, and Mrs. Paul M. Rea. Mr. Fitzhugh Salley has donated a subscription to the Auk, the most important of the ornithological journals. Most of the popular magazines as well as twenty five new books are the gift of Mr. and Mrs. H. B. Sewell.

A special invitation is extended to school-children to attend the opening of the reading room on October 31st.

THE NATURAL HISTORY SOCIETY

The Charleston Natural History Society held its first Autumn meeting on the afternoon of October 15 in the lecture hall of the new Museum building. Mrs. Paul M. Rea, President of the Society, and Prof. Rea, Director of the Museum, welcomed the members. The meeting was devoted mainly to accounts of summer work by several of the members and to the report of the executive committee, which was unusually full and possessed especial importance, embodying the plans by which the committee hopes to systematize the proceedings of the Society at its meetings and to facilitate and render more valuable the observations of birds in the field. The Society has done much to awaken in Charleston an interest in bird-study and to train keen and accurate observers. It has accumulated valuable data on the habits of the birds of our coast and its list of members has grown steadily until now it contains more than forty names. The Society has reached a stage of development when its efforts, if properly directed, can produce results of great importance.

The following recommendations of the executive committee were unanimously adopted by the Society.

First. That meetings be held once instead of twice each month and that the order of business be as follows:—(1) brief descriptions, illustrated by mounted specimens, of the birds whose acquaintance is to be made in the field; (2) bird news and notes of field work, comprising short papers to be read by individual members or by the Secretary; (3) talks upon such subjects relating to birds as may be selected by the executive committee.

Second. That a definite schedule of field trips be planned and advertised in advance.

Third. That Mr. Henry P. Williams, who has assisted the Society in many ways and on many occasions, be elected an Honorary Member.

Fourth. That all funds now in the treasury aside from those needed for immediate running expenses, be devoted to the purchase of specimens of local birds for the Museum Collection.

CALENDAR OF THE NATURAL HISTORY SOCIETY

October 29th, Thursday. Field trip to the Navy Yard. MR. WESTON and MR. LEGGE. 8-15 *a. m. car from the Battery*; 8-30 *car at Line St.*

November 5th, Thursday. Field trip to the Navy Yard. MR. WESTON and MR. LEGGE. 8-15 *a. m. car from the Battery*; 8-30 *car from Line St.* Regular Monthly Meeting of the Society at the Museum at 4-30 p. m. Lecture by MR. HERBERT R. SASS on "Ancestors of Birds." *Visitors welcome.*

November 14th, Saturday. Field trip to St. Andrews Parish. MR. SASS. *Start from the Museum at 8-30 a. m.*

November 26th, Thursday. Special holiday field trip to James Island. MR. SASS. *Leave the Battery at 8-30 a. m. by boat.*

NOTES FROM THE MUSEUM

This is the first issue of the BULLETIN to go out from the new Museum building. The workrooms and offices were occupied in June and during the summer the library was installed. Fall plans provide for the opening of the public reading room on October 31st; the arrangement of the study collections; the installation of the seasonal collection of local birds and continuation of the work of the Natural History Society; the mounting of a model of Charleston harbor in connection with the first of a series of commercial exhibits; and the transfer of much material from the old building.

The collection of living reptiles has increased during the summer both by the addition of several new varieties and by the birth of a number of young. The smaller of our handsome Diamond Rattlesnakes distinguished herself on August 17th by producing the unusually large number of eighteen young which now form one of the most interesting of the snake families, especially when catching mice for food. The big rattlers have delighted their keepers by eating rats, since this species seldom eats in captivity. On August 16th the Red-bellied Water Snake produced fifteen young. The Common Water Snake added twenty-one members to the collection about the same time and in September four Pilot Black Snakes hatched from eggs. The temporary cases in which this collection is now housed will soon be replaced by permanent exhibition cases.

BULLETIN
OF
THE CHARLESTON MUSEUM

EDITED BY
PAUL M. REA

CONCERNING TAXIDERMY
LIBRARY NOTES
THE NATURAL HISTORY SOCIETY
NOTES FROM THE MUSEUM

The Charleston Museum

UNDER THE AUSPICES OF THE COLLEGE OF CHARLESTON

Director

PAUL M. REA

Assistant

FRANCIS M. WESTON, JR.

Librarian

Honorary Curators

WM. G. MAZYCK.....	<i>Conchology</i>
DANIEL S. MARTIN.....	<i>Geology</i>
ARTHUR T. WAYNE.....	<i>Ornithology</i>
NATHANIEL W. STEPHENSON.....	<i>Art</i>

THE CHARLESTON MUSEUM was in existence as early as 1777 under the auspices of the Charleston Library Society, was transferred to the Literary and Philosophical Society of South Carolina in 1815, to the Medical School in 1843, and to the College of Charleston in 1850. In 1907 a building was provided by the City and the name changed to The Charleston Museum.

The Museum is dependent upon dues from members and private subscriptions for all permanent improvements, for increase of the collections, and for maintenance of its educational and scientific work.

The membership fees are:—

ANNUAL MEMBERS.....	\$ 10	PATRONS.....	\$ 500
SUSTAINING MEMBERS.....	25	BENEFACTORS.....	1000

The privileges of members include admission on pay days, tickets to members' lecture courses, and copies of Museum publications.

THE BULLETIN OF THE CHARLESTON MUSEUM is published monthly, from October to May, by the Museum and is entered at the Post Office at Charleston, S. C., as second class matter.

BULLETIN

OF

THE CHARLESTON MUSEUM

VOL. 4 CHARLESTON, S. C., NOVEMBER, 1908 No. 7

CONCERNING TAXIDERMIV

With the increasing number of boys interested in bird study through the Natural History Society, a growing interest in taxidermy is evident. Indeed we have had several very creditable beginnings of this work brought to the Museum. We regret that the Museum does not have an active department of taxidermy in which we might help boys who really wish to learn this art. Without this, however, we wish at least to extend a little advice and suggestion to would-be taxidermists through the pages of the BULLETIN.

Good taxidermy is a very difficult and complicated art while poor taxidermy is worthless. The library contains much interesting material about the methods of modern taxidermy and the Museum may later offer a talk on this subject to boys who are interested. The point of the matter is, however, that good taxidermy cannot be learned in a day—nor in a few weeks—and depends upon certain fundamental operations to which most boys pay far too little attention. The first of these is the preparation of good skins. Some of the best ornithologists we know put up exquisite skins but never attempt to mount a bird. Unmounted skins of birds and animals are of great value to

museums, for they occupy but little room and are more conveniently studied than mounted specimens.

Now, the preparation of a really good skin probably requires as much and as careful work as most boys expect to devote to the entire process of mounting. Mounting, then, should not be attempted until one is able to put up perfect skins and any boy who has attained anywhere near this proficiency can be of much service to the Museum and through it receive in return training and facilities for more ambitious work.

This brings us to the relation of the Museum to taxidermy. Boys who come to the Museum know that we are deeply interested in the protection and preservation of birds and animals. The Museum, therefore, cannot encourage indiscriminate slaughter of birds and animals as material for amateur experiments in taxidermy, and we feel sure that even the boys who are most enthusiastic taxidermists have thought of the harm their pastime may do. The Museum is maintained as a center for the study of nature and the preservation of specimens. It ought, therefore, to maintain all the collections necessary for the studies of the whole community and there should be no need for individuals to make private collections.

What then is the boy who is interested in taxidermy to do? Why, let him learn to make good skins for preservation in the Museum. For practise material he may use English sparrows and rats or mice, and until he can put up perfect skins of these he should not kill any song bird or wild animal; even then he should work under the direction of the Museum.

No one should think that a good series of English sparrow or rat skins would be without value. If such a series included specimens of both sexes, taken at all ages and all seasons, it would show a great many points of value which the Museum has no means of demonstrating at present.

This subject will be brought up at the meeting of the Natural History Society on December 3d, when times will be appointed for a series of demonstrations and talks on the subject.

LIBRARY NEWS

The last issue of the BULLETIN contained an historical sketch of the Museum Library and an announcement of the opening of a public reading room on October 31st. This was the occasion of such gratifying evidence of public interest in the new museum that some account of it may well be given here.

With the assistance of ladies interested in the Museum and firms in the city, a silver tea was given during the formal opening of the library. This emphasized the social aspect of the occasion and yielded a profit of over fifty dollars for further equipment. The attendance of over five hundred people and their expression of interest in this, the first department to be installed in the new building, is a gratifying evidence of public appreciation. Many children were present, who devoted themselves with avidity to the enjoyment of the books and magazines, quite oblivious of the older people about. We hope they will feel that the reading room belongs to them and are encouraged to think that this will be the case by the fact that seventy five readers were counted on the following Saturday when the reading room was regularly open for the first time.

In addition to the assistance received in preparing for the formal opening of the library the Museum takes pleasure in acknowledging the presentation to the reading room by Mrs. Henry S. Holmes of Charleston, of three handsomely framed Audubon plates. These are lithographic copies made in 1860 from the original prints, the copper plates having been destroyed by fire. These plates now fill spaces on the walls of the reading room for which no provision had been made. It is especially appropriate

that one of them represents the Carolina Paroquet, once abundant in this state but for many years extinct here and now almost extinct in Florida. In this connection mention may be made of the receipt of a skin of this species, taken in Florida in 1892 by Mr. Arthur T. Wayne and now presented by him to the Museum.

The reading room is further adorned by a bust of Dr. John Bachman, for many years closely identified with the Museum as president of the Literary and Philosophical Society. This bust was presented to the Museum by his grand-daughter, Mrs. Jennie Haskell Rose, some months ago, and is placed above the reference book case. On the opposite wall is a medallion representing Professor Louis Agassiz, who was largely instrumental in the reorganization of the Museum in 1850. On the North wall is a portrait of Professor Francis S. Holmes, curator of the Museum from 1850 to 1869. Looking through the arch into the stack room, one sees a large portrait in oil of Dr. Gabriel Manigault, curator from 1873 to the time of his death in 1899. The Museum hopes soon to secure a portrait of Professor John McCrady, who served as curator from 1869 to 1873. In addition to these portraits of former officers of the Museum, the ends of the book stacks are adorned with busts of Linnaeus, Cuvier, St. Hilaire, and Huxley.

For the benefit of intending visitors a list of some of the recent accessions to the library is given below.

PARTIAL LIST OF RECENT ACCESSIONS TO THE LIBRARY

By Purchase

Bryden, H. A., Animals of Africa
Elliot, D. G., Wild fowl of North America
Elliot, D. G., North American shore birds
Lottridge, S. A., Animal snapshots and how made
Wallace, A. R., Malay Archipelago
Darwin, C., Journal . . . of a voyage . . . round the world

Owen, R., Life of Richard Owen, 2 vols.
Baird, Brewer, and Ridgway, North American land birds, 3 vols.
Lull, R. S., Evolution of the horse family
Lull, R. S., Evolution of the elephant
Loey, W. A., Biology and its makers

Gift of Mr. and Mrs. H. B. Sewell

Chapman and Reed, Color key to North American birds
Reed, C. A., North American birds' eggs
Mayer, A. G., Sea-shore life
Cragin, B. S., Our insect friends and foes
Lucas, F. A., Animals before man in North America
Seeley, H. G., Dragons of the air
Herrick, F. H., Home life of wild birds
Hornaday, W. T., Camp fires in the Canadian Rockies
Lounsberry, A., Southern wild flowers and trees
Wolff, H. T., Goldfish breeds and other aquarium fishes
Wallace, A. R., Darwinism
Reed, C. K. and C. A., Guide to taxidermy
Emerson and Weed, Our trees; how to know them
Ball, R. S., Earth's beginning
Arnold, A. F., Sea-beach at ebb tide
Bateman and Bennett, Book of aquaria
Serviss, G. P., Astronomy with an opera glass
Emerton, J. H., Common spiders of the United States
Dickerson, M. C., Moths and butterflies
Lucas, F. A., Animals of the past
Hornaday, W. T., American natural history
Lummis, C. F., Some strange corners of our country
Shaler, N. S., Domesticated animals
Wilkinson, F., Story of the cotton plant
Bostock, F. C., Training of wild animals

Gift of Mr. Henry P. Williams

Giberne, A., The romance of the mighty deep
Elliott, G. F. S., The romance of plant life
Elliott, G. F. S., The romance of savage life

Williams, A., The romance of early exploration
Williams, A., The romance of modern exploration
Williams, A., The romance of modern invention
Williams, A., The romance of modern locomotion
Williams, A., The romance of modern mechanism
Williams, A., The romance of modern engineering
Gibson, C. R., The romance of modern electricity

THE NATURAL HISTORY SOCIETY

The November meeting of the Natural History Society was held in the lecture room of the Museum on Thursday, Nov. 5th. Officers for the ensuing term were elected as follows; president, Mrs. Paul M. Rea; vice-president, Miss Annie Sloan; treasurer, Mr. F. M. Weston, Jr. The office of secretary was left to be filled at the next meeting.

The business meeting was followed by reports of field work by members of the Society. Mr. H. R. Sass then delivered an illustrated lecture on "Ancestors of Birds." This was the first of a series of lectures on the structure and habits of birds, which the Society is planning for its meetings during the winter.

The regular December meeting will be held in the Museum on Thursday, Dec. 3d, at 4.30 P. M. After transaction of routine business and reports of field work by members, Professor Rea will give an informal lecture on "Feathers". An invitation to be present is extended to all who are interested.

The bulletin of bird arrivals is to be found in the reading room of the Museum and records the arrival of winter visitants as soon as they are reported.

CALENDAR OF THE NATURAL HISTORY SOCIETY

December 3rd, Thursday. Regular monthly meeting of the Society at the Museum at 4.30 p. m. Lecture by PROFESSOR REA on "Feathers." *Visitors welcome.*

December 10th, Thursday. Field trip to the Navy Yard. MR. WESTON and MR. LEGGE. 8.15 a. m. *car from the Battery*; 8.30 *car from Line St.*

December 19th, Saturday. Field trip to the Navy Yard. MR. WESTON. 8.15 a. m. *car from Battery*; 8.30 *car from Line St.*

NOTES FROM THE MUSEUM

The library and reading room of the Museum are open to the public on Saturdays, from 10 till 7. No exhibits are yet open except the collection of living snakes, which is temporarily installed in the entrance hall and may be seen on Saturdays. The larger specimens are still in the old museum at the College, but are closed to the public.

Recent progress in installation includes the addition of a second magazine rack in the reading room, provision for further pamphlet boxes and binders, completion of cases for study and storage collections and a metal-lined case for preservation of skins. The model of Charleston harbor, obtained from the Chamber of Commerce, is being installed and a permanent case for a part of the snake collection is under construction.

The skin of a yellow-billed tropic bird (*Phaethon aethereus*) has been presented to the Museum by Dr. H. C. Kellers who collected and prepared the specimen on shipboard off Acapulco, Mexico.

Mr. Herbert R. Sass has resigned from the staff of the Museum to become news editor of the News and Courier. His place has been taken temporarily by Mr. Francis M. Weston, Jr.

At the November meeting of the Natural History Society a series of lantern slides, made by the Lumiere process of color photography and loaned by the Philadelphia Museums, was demonstrated in comparison with hand-colored slides, loaned by Mr. F. M. Woodruff, of the Chicago Academy of Sciences. The Museum would find a set of colored lantern slides of common local birds, prepared by either process, of great value in its work with the schools and the Natural History Society.

The specimens which the Natural History Society recently voted to purchase for the local bird collection of the Museum have been ordered for delivery in time for the January meeting. The seasonal exhibit of local birds will be transferred, before the December meeting, to storage cases in the new building, where they will be accessible to members of the Society, though not on public exhibition.

A handsome specimen of the Southern Fox Squirrel (*Sciurus niger*) has been received from Mrs. J. M. Moseley of Charleston. This specimen came from this state and had been in captivity for eight years.

BULLETIN
OF
THE CHARLESTON MUSEUM

EDITED BY
PAUL M. REA

THE NEW BUILDING
HISTORY OF THE MUSEUM
THE NATURAL HISTORY SOCIETY
NOTES FROM THE MUSEUM

The Charleston Museum

UNDER THE AUSPICES OF THE COLLEGE OF CHARLESTON

Director

PAUL M. REA

Assistant

FRANCIS M. WESTON, JR.

Librarian

Honorary Curators

WM. G. MAZYCK.....	<i>Conchology</i>
DANIEL S. MARTIN.....	<i>Geology</i>
ARTHUR T. WAYNE.....	<i>Ornithology</i>
NATHANIEL W. STEPHENSON.....	<i>Art</i>

THE CHARLESTON MUSEUM was in existence as early as 1777 under the auspices of the Charleston Library Society, was transferred to the Literary and Philosophical Society of South Carolina in 1815, to the Medical School in 1828, and to the College of Charleston in 1850. In 1907 a building was provided by the City and the name changed to The Charleston Museum.

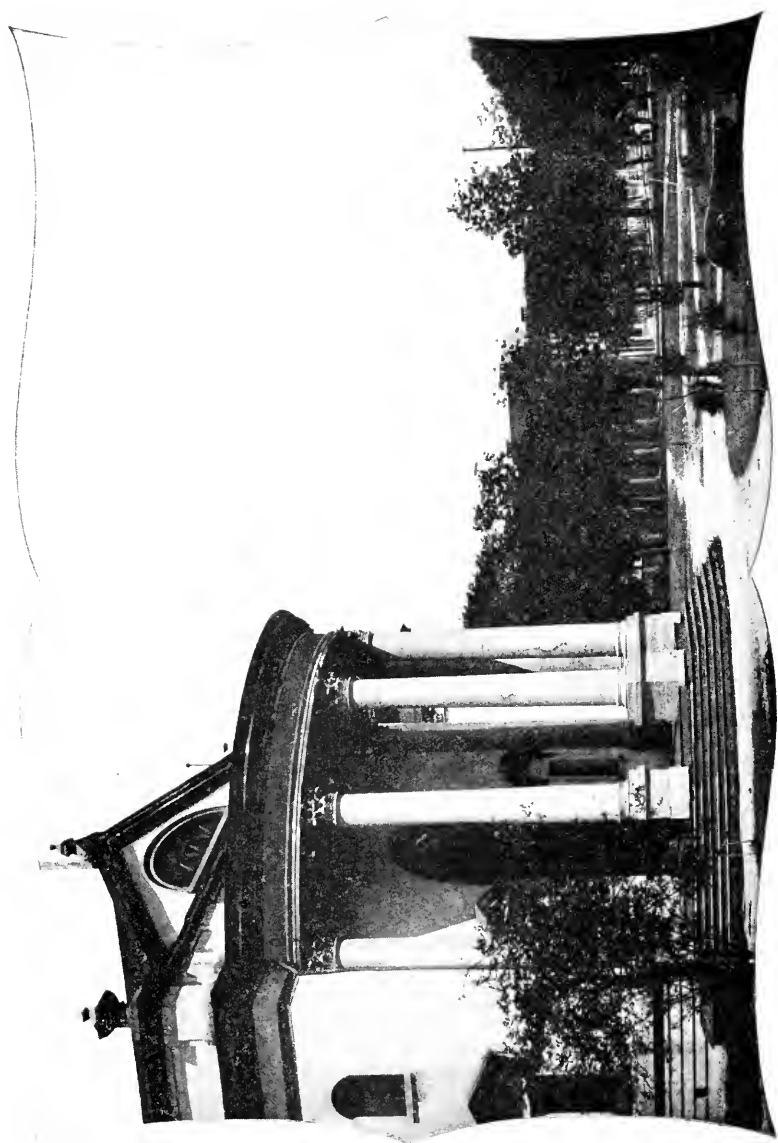
The Museum is dependent upon dues from members and private subscriptions for all permanent improvements, for increase of the collections, and for maintenance of its educational and scientific work.

The membership fees are:—

ANNUAL MEMBERS.....	\$ 10	PATRONS.....	\$ 500
SUSTAINING MEMBERS.....	25	BENEFACTORS.....	1000

The privileges of members include admission on pay days, tickets to members' lecture courses, and copies of Museum publications.

THE BULLETIN OF THE CHARLESTON MUSEUM is published monthly, from October to May, by the Museum and is entered at the Post Office at Charleston, S. C., as second class matter.



ENTRANCE TO THE NEW CHARLESTON MUSEUM

BULLETIN

OF

THE CHARLESTON MUSEUM

VOL. 4 CHARLESTON, S. C., DECEMBER, 1908 No. 8

THE NEW BUILDING

We publish this month the floor plans of the new home of the Museum and a view of the entrance, as well as a cut of the main building of the College of Charleston, the second floor of which has been occupied by the Museum since 1850. Further development of the Museum in this location was hindered by its difficulty of access, poor lighting, and entire lack of storage and work rooms. The new building is favorably situated on Rutledge Avenue, accessible by two car lines connecting with all parts of the city. In addition to 35,000 square feet of exhibition space an equal amount is available for storage and work rooms, shops, laboratories, offices, library, lecture rooms, etc. It is a steel frame building with brick wall and a stucco exterior, erected in 1899 as an auditorium, with funds bequeathed to the city by John Thomson, Esq. It proved an acoustic failure and after temporary service as a theater and later as a hospital it was devoted to the use of the Museum by act of Council, January 8, 1907.

The most important changes necessary to adapt the building to the uses of the Museum were the leveling of floors and galleries, which inclined toward the stage, the building of partitions,

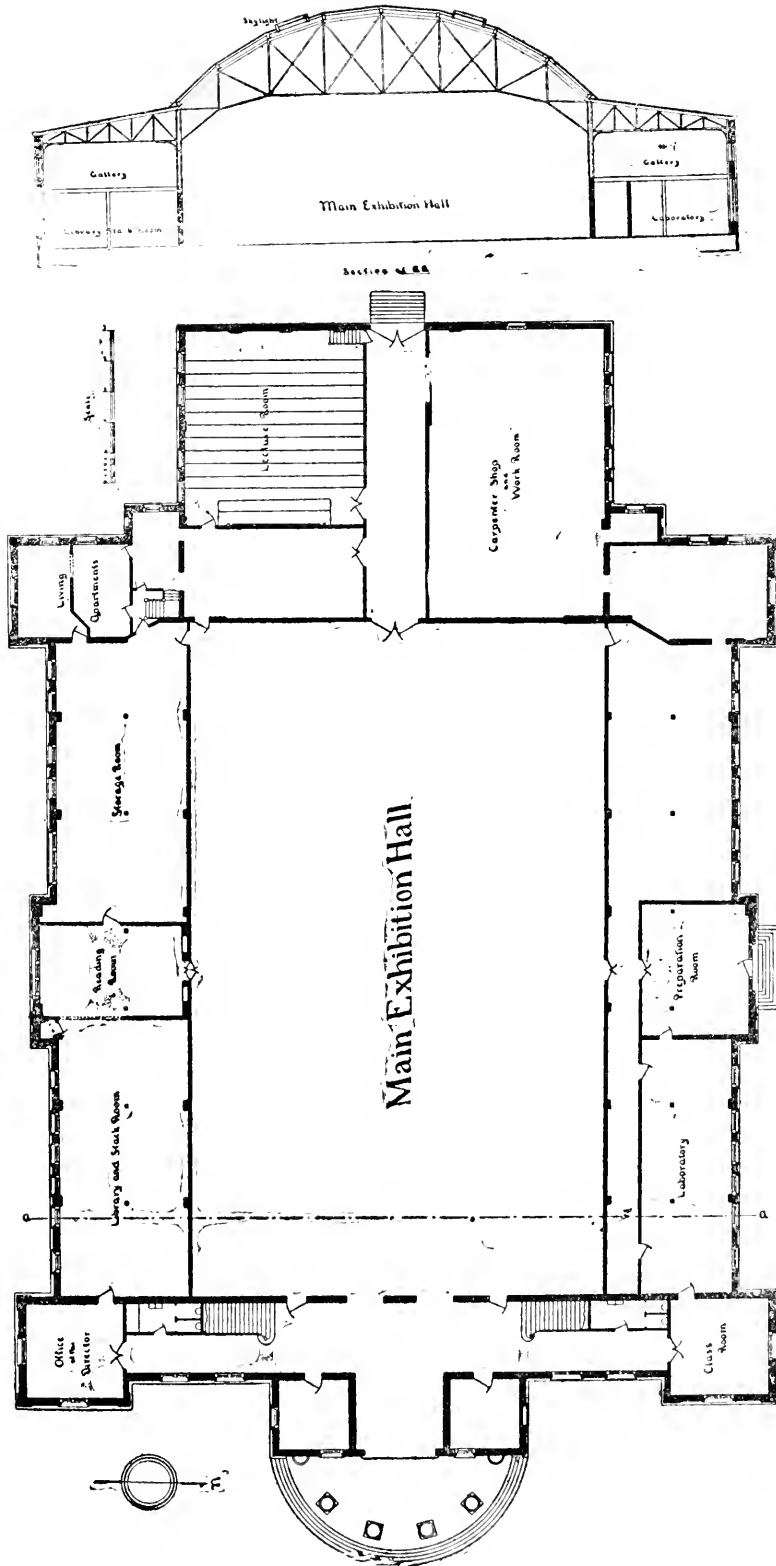
and the installation of overhead lighting in the main exhibition hall. The result is a most convenient arrangement of space, which could hardly be improved in a building primarily designed for museum purposes. Plans were originally made for fire-proof construction in remodelling the building but the necessary funds were not available and consolation must be sought in the fact that the fire protection in the College was no better and that the new building is well isolated.

Wide door ways lead from the portico to the entrance hall, where turnstiles are to be placed to record the number of visitors. Facing the entrance and above the openings leading to the central exhibition hall is a white marble tablet commemorating the donor of the building. On the side wall is placed the switch-board controlling the lights and a telephone which is one of a ten station system communicating with all parts of the building.

From the entrance hall broad corridors lead to the office of the director in the south-east corner of the building and to the small classroom on the north, used by the department of biology and geology of the College of Charleston. Smaller offices adjacent to the entrance hall also open on the corridors and broad stairways rise to the galleries. Two toilets are placed under the stairs.

The walls of entrance hall and corridors are painted a pale buff and the trim a dull black. These colors will be used not only in the main exhibition hall and galleries but in finishing the cases as well. The buff is a favorable background for specimens and can be matched in a paper stock for labels which will not fade. The necessity of using many old cases requires that they be painted and black seems to form the most pleasing exterior color.

The main exhibition hall, 146 feet long by 90 feet wide, occupies the center of the building and is surrounded on front and



MAIN FLOOR PLAN AND SECTION OF THE NEW BUILDING

sides by galleries 30 feet wide. Under the galleries are located the library, workrooms, etc. The main hall is lighted by skylights, four of which are now in place and others are to be installed, it is hoped, during the coming year. The galleries are also unfinished and when completed will be approached by two stairways rising from the western end of the main hall, as well as from the entrance corridors, thus allowing a convenient circuit. Construction of cases in the main exhibition hall has been begun and will be continued as rapidly as possible during the coming year. Ultimately the main hall will be divided by cases and low screens into alcoves each devoted to particular subjects. Above the wall cases a row of ventilating transoms facilitates circulation of air and a comfortable temperature in summer.

From the middle of the south side of the main exhibition hall double leather doors with oval lights of clear glass invite the visitors to the reading room and library of the Museum. Here are reading tables, magazine racks and reference book shelves. From the reading room the long stack room opens by a wide arch in which the counter for delivery of books is placed. In view of the warm southern exposure the library walls are finished in a soft gray green with the trim, book stacks, and furniture stained a dark forest green, emphasizing the quiet comfort and restfulness of this part of the building given over to reading and study. The librarian's desk is placed behind the delivery counter, overlooking the reading room. The card catalog cabinet is mounted on a pivot on the delivery counter and can be consulted from either side. At the left a small lavatory provides running water, mirror and clothes-rack for the convenience of the librarian.

In the west wall of the reading room a door opens to the room devoted to the study and storage collections. Here are cases

containing trays of uniform size aggregating more than 1500 square feet of storage space. These trays contain much material ready for exhibition as well as the reserve collections intended for study purposes. It is in these trays that all the smaller specimens were transferred from the old building and in this room they will be prepared for exhibition.

Returning to the main exhibition hall one sees a large doorway at the west end, opening into a hallway leading to the rear entrance of the building. Here freight is received and unpacked in the carpenter shop and lumber room adjoining, where crating can be stored, cases built, and other construction carried on without interference with other activities of the Museum.

Across the hall from the carpenter-shop is the lecture room, purposely placed at the rear of the building in order that attendants upon lectures must pass through the exhibition hall and gain some impression of the scope of the collections.

The lecture room is provided with rising tiers of seats accommodating 200 people, a lecture platform and long counter for demonstration of specimens, and a blackboard which can be depressed to allow the projection of lantern slides upon the wall. The room is wainscoted with sheathing stained a dark forest green. Above this the walls are left in white plaster, and the steel ceiling is also white. Especial care has been taken with the ventilation and lighting of this room. Swinging sashes in four large windows on the south side, transoms over the doors, and ventilating apertures in the ceiling provide for the circulation of fresh air, while the cluster lights depending from the ceiling are carefully shaded from the eyes of the audience. The location of the main entrance near the front of the room defends the lecturer from the usual disheartening row of empty front seats, while a second entrance leads late comers unobtrusively to the vacant seats at the rear.

A special entrance on the north side of the building leads to a room for the storage and preparation of fresh and alcoholic material for the Museum or for the biological laboratory, which is located between this room and the classroom. The laboratory has a north light for microscopic work and the usual furniture and apparatus.

West of the preparation room is a space unutilized as yet but designed ultimately for installation of marine aquaria. In the south-west corner of the building a suite of living apartments has been provided for an officer of the Museum.

HISTORY OF THE MUSEUM

The history of the Museum, as published in a series of articles in the BULLETIN, is particularly incomplete for the period from 1826, when the Museum was maintained by the Literary and Philosophical Society of South Carolina in a building on Chalmers St., to 1843, when it was located in the Medical College on Queen St., as shown by a quotation from the catalog of that year published by Mr. W. G. Mazyck.¹ The wording of this reference led Mr. Mazyck to suppose that the Museum had been recently transferred to the Medical College. That this was not the case is shown by the following statement contained in an advertisement of the Medical College published in 1828.²

The Student of Anatomy and Natural History, has facilities afforded him, which are equalled by few, and surpassed by no similar institution in our country. In addition to the Anatomical preparations and Chemical Apparatus received last year from Europe, the Chalmers-Street Museum, containing a large collection of Minerals, Shells, Birds, &c. has been removed to the college, where it will permanently remain.

That the Museum remained under the auspices of the Literary and Philosophical Society is rendered probable by the reference

¹ BULL. CHAS. MUS., Vol. 3, No. 6, Oct., 1907, p. 58.

The Southern Literary Gazette, Vol. 1, Sept., 1828, p. 64.

to it as "the Museum of the Literary and Philosophical Society" in the catalog of the Medical School for 1843, which Mr. Mazyck has quoted.

Two skulls now in the Museum belong to this period. One ¹ bears the inscription "Doe, April 25, 1829," the other ² is the skull of a fox and in addition to the date "26 Feb. 1830," bears the initials "C. H." A number of birds whose history is only partially known probably belong to the late thirties, and there is every probability of identifying other specimens with this period when they can be more carefully examined.

The letters of Dr. John Bachman to Audubon contain a number of references to the Museum which are of great interest and will be quoted in a later article.

THE NATURAL HISTORY SOCIETY

The December meeting of the Natural History Society was held in the lecture hall of the Museum on Thursday, Dec. 3d. Miss Lottie Olney was elected secretary.

Mr. F. M. Weston Jr., demonstrated a specimen of the Red-throated Loon, *Urinator lumme*, shot by Mr. Samuel Lapham Jr., from a yard on South Battery. This is probably the third record for this species in South Carolina, Mr. Arthur T. Wayne having taken but two specimens in the past twenty five years. It is almost certainly the first record for the city of Charleston.

The reports of field work by members were followed by an illustrated talk on "Feathers" by Professor Rea.

¹ Spec. No. 2525. ² Spec. No. 2330.

CALENDAR OF THE NATURAL HISTORY SOCIETY

January 7th, Thursday. Regular monthly meeting of the Society at the Museum at 4:30 p. m. Lecture by PROFESSOR REA on "Bird Skeletons." *Visitors welcome.*

January 16th, Saturday. Field trip to St. Andrews Parish. MRS. REA. *Party will meet at the New Bridge at 9:15 a. m.*

January 30th, Saturday. Field trip to the Navy Yard. MRS. REA. *8:45 a. m. car from the Battery; 9:00 car from Line St.*

NOTES FROM THE MUSEUM

The library and reading room of the Museum are open to the public on Saturdays, from 10 till 7. No exhibits are yet open except the collection of living snakes, which is temporarily installed in the entrance hall and may be seen on Saturdays. The larger specimens are still in the old museum at the College, but are closed to the public.

The Museum has received as the gift of Mr. W. G. Mazyck, a very interesting specimen of petrified wood found at a depth of twelve feet below the surface, on the corner of Boyce's Wharf and East Bay. Mr. Mazyck received the specimen from Mr. Momer Goldsmith. It is about twenty inches long and shows knot-holes and the structure of the wood, but it is especially interesting because of clear marks of fire and a possible axe wound.

Several volumes of the National Geographic Magazine and a subscription for the coming year have been given to the library by Miss Henrietta Murdoch.

The travelling collection illustrating the iron and steel industry has been recently used in Miss Taylor's class in the Memminger school.

The Museum adopted the plan of the Children's Museum in Brooklyn of placing books suitable for gifts on a special "Christmas book shelf."



HOME OF THE CHARLESTON MUSEUM 1850 TO 1908

BULLETIN
OF
THE CHARLESTON MUSEUM

EDITED BY
PAUL M. REA

REPORT OF THE DIRECTOR OF THE MUSEUM
FOR THE YEAR 1908
THE NATURAL HISTORY SOCIETY

Volume V, Number 1

JANUARY, 1909

The Charleston Museum

UNDER THE AUSPICES OF THE COLLEGE OF CHARLESTON

Director

PAUL M. REA

Assistant

FRANCIS M. WESTON, JR.

Librarian

Honorary Curators

WM. G. MAZYCK.....	<i>Conchology</i>
DANIEL S. MARTIN.....	<i>Geology</i>
ARTHUR T. WAYNE.....	<i>Ornithology</i>
NATHANIEL W. STEPHENSON.....	<i>Art</i>

THE CHARLESTON MUSEUM was in existence as early as 1777 under the auspices of the Charleston Library Society, was transferred to the Literary and Philosophical Society of South Carolina in 1815, to the Medical School in 1828, and to the College of Charleston in 1850. In 1907 a building was provided by the City and the name changed to The Charleston Museum.

The Museum is dependent upon dues from members and private subscriptions for all permanent improvements, for increase of the collections, and for maintenance of its educational and scientific work.

The membership fees are:—

ANNUAL MEMBERS.....\$ 10	PATRONS.....\$ 500
SUSTAINING MEMBERS..... 25	BENEFACTORS..... 1000

The privileges of members include admission on pay days, tickets to members' lecture courses, and copies of Museum publications.

THE BULLETIN OF THE CHARLESTON MUSEUM is published monthly, from October to May, by the Museum and is entered at the Post Office at Charleston, S. C., as second class matter.

BULLETIN

OF

THE CHARLESTON MUSEUM

VOL. 5 CHARLESTON, S. C., JANUARY, 1909 No. 1

REPORT OF THE DIRECTOR OF THE MUSEUM FOR THE YEAR 1908

The occupation of the offices and workrooms in the new building, the transfer and installation of the library, the opening of a public reading room, and the removal of a large quantity of the smaller specimens from the College to the storage cases in the new Museum, constitute the most important events of the past year.

The completion of the building, the raising of funds for installation of the collections, and the publication of the first of a series of "Contributions" of a research character, are the problems of the coming year.

HISTORY OF THE MUSEUM

Mr. William G. Mazyek's investigations into the history of the Museum have been supplemented by a note in the December issue of the BULLETIN, showing that the Museum was transferred in 1828 from Chalmers St. to the Medical College on Queen Street.

The Director is indebted to Mr. John Bennett for bringing to his attention an advertisement of the Museum appearing in the *Charleston Courier* for November 28, 1827, which is printed below


in full, as an interesting indication of the condition of the Museum at that time:—

The Museum of South Carolina,

In Chalmers' Street, (Near the City Square,)

Will be open every day, from 9 o'clock in the Morning until 9 in the evening.

Admittance, 25 cents, Children half price—Season Ticket \$1.

 Specimens in any department in Natural History will be thankfully received; and it is requested that objects intended for the Museum will be sent to Mr. Dan C. Kenifeck, who is charged with its keeping; or to either of the following gentlemen, the Curators of the Museum—Mr. Elliott, Mr. Ford, Bishop England, Dr. Johnson, Dr. Wagener, Dr. Ravenel, Dr. Moultrie, Dr. Campbell, and Dr. Ramsay.

Museums were evidently popular in those days, for the same issue of the *Courier* contains an advertisement of another Museum called the "Charleston Museum" (but not known to have any connection with the present Museum), situated at the corner of Market and Meeting streets, and containing 200 species of birds in addition to more sensational attractions. This institution is also said to be brilliantly illuminated every evening.

The Director will be indebted to any one who will bring to his attention newspaper articles or other information bearing upon the history of the Museum.

THE NEW BUILDING

City Council made an appropriation sufficient to complete the offices, work rooms, library and lecture room during the past year, but left the completion of the main exhibition hall and galleries for the coming year. In June the offices were occupied and during the summer the library was installed and large numbers of the smaller specimens transferred to the storage cases

in the new work rooms. The public reading room was formally opened on October 31st.

The most important improvements necessary to complete the building include additional skylights for the main hall, the completion of the galleries, and interior and exterior painting.

FINANCES

The running expenses for the year exceeded the City Appropriation for Maintenance by \$353.93. This deficit was met by transfer from the General Account, leaving \$392.50 for permanent improvements. The General Account received the contributions of twenty-two Sustaining Members and six Annual Members, to the amount of \$640. A balance of \$130.57 carried over from 1907 brought the General Account up to \$770.57. In addition to those who qualified as members in the usual manner, Mrs. Henry S. Holmes was elected a Sustaining Member for the year in recognition of her gift of three framed Audubon plates, and Mrs. H. B. Sewell in recognition of her gift of books to the library.

The Building Account carried a balance of \$4762.55 at the beginning of the year and received from City Council during the year appropriations to the amount of \$2814.00, making a total for the year of \$7576.55, all of which has been expended in fitting the new building for the use of the Museum.

For 1909 it is essential that the main exhibition hall be completed and installation of the collections actively carried on. For installation about eight thousand dollars must be raised from private sources and this constitutes the chief problem of the coming year.

While funds for installation are the most pressing immediate need, the fact should not be forgotten that until an adequate endowment is obtained the Museum rests upon a dangerously precarious foundation.

The past four years have demonstrated the importance of the Museum, its unique position among institutions of its kind throughout the country, and its power to interest the people of Charleston. To enable it to realize at once the educational and economic possibilities which are within its reach, a generous rallying of Charleston people to the task of providing funds for installation is necessary.

ADMINISTRATION

During the year gratifying progress has been made in the systematic re-organization of the work of the Museum and in the completion of the records, resulting in greatly increased efficiency of administrative methods. At the same time the necessity of requiring of the staff many duties of a miscellaneous character has retarded progress in the technical work for which they were employed. Thus, much of the time of one assistant has been required for the duties of acting librarian, while that of another has been largely occupied with construction. These conditions are now greatly improved, although a wide variety of legitimate work will always confront a small staff in so large an institution.

Work has been retarded during the latter part of the year by the resignation of Mr. F. W. Wamsley in September, and Mr. H. R. Sass in October. Mr. Sass' place was temporarily taken by Mr. F. M. Weston, Jr. until the end of the year. In the re-organization of the staff, necessitated by these changes, a librarian will be employed to give to the library the care it has long needed and to assist in the educational work.

With the completion of the main exhibition hall the work of the Museum will to a large extent change from the stock-taking process which has occupied most of the time of the staff for several years, to case-construction and the preparation and installation of collections. For this work a printing outfit is indis-

pensable for good results, as stated in the annual report last year. It is also necessary that a considerable fund be available at once for case-construction, both for economy and uniformity. Finally, the services of a trained taxidermist are necessary to renovate the old specimens and prepare them for exhibition. The time is passing when the Museum can expect to obtain satisfactory service from untrained assistants.

Tentative plans have been made looking to a co-operation between the Agricultural Society and the Museum in the establishment of agricultural exhibits, while the co-operation of the Manufacturers, Bankers, and Jobbers Association in establishing economic exhibits was promised last year. The Chamber of Commerce has deposited in the Museum a model of Charleston Harbor, showing the effect of the construction of the jetties. All of these are indications of the possible development of the Museum as the clearing house of activities pertaining to the development and conservation of the natural resources of this section of the state.

The co-operation of the Museum with the public schools has been restricted by the confusion of moving, and the general demand on the part of the schools for the privileges of the Museum is one of the most urgent reasons for early installation of the collections. The work which has been done is discussed under the head of Public Instruction.

The Director represented the Museum at the third annual meeting of the American Association of Museums in Chicago, May 5-7, 1908, when he was honored by re-election as secretary of the Association.

ZOOLOGY

No increase has been made in the department of invertebrate zoology beyond the purchase of a small collection of unidentified Florida Polychæta, which has been partially worked up by the Director.

A collection of living snakes has been obtained through the interest of a friend of the Museum and forms a new departure in vertebrate zoology. In view of the difficulty of satisfactorily preserving reptiles for exhibition, and of the small care and expense of keeping them alive, it seems desirable to make this collection a permanent feature of the Museum. Fishes are another group of which the same conditions are true and at some future time it is hoped that aquaria may be installed, in which fishes and characteristic invertebrates may be kept.

A number of skins of birds and small mammals have been prepared during the year and a much needed zinc-lined, insect-proof case provided for their storage. Mr. Arthur T. Wayne, honorary curator of birds, has presented to the Museum a skin of the Carolina Paroquet, taken by him in Florida in 1892. This is the only species of parrot native to the United States and was formerly abundant in South Carolina, but is now very nearly if not quite extinct in Florida, its last stronghold. The Museum has but one other specimen and that in very poor condition, so that this skin is an important accession.

GEOLOGY

The honorary curator of this department, Professor D. S. Martin, spent two months in further revision of the collections, with the result that the department is now very nearly established on a working basis. Professor Martin's plans for the development of the department promise extensive additions of important material and the installation of exhibits of great scientific interest. The Director further hopes to install industrial and economic exhibits on an extensive scale.

The importance of increasing the collection of fossils from the phosphate beds is again urged.

ANTHROPOLOGY

Since the preliminary revision of this department in 1907, as

described in the report for that year, no active work has been attempted. Opportunities for collecting exist in the State, which would almost certainly yield interesting material, but the staff is entirely inadequate for such work at present.

ART

Active work in this department has been prevented by lack of available space, but in May an exhibition of Mr. Charles Henry White's etchings of Charleston was arranged by the honorary curator, Mr. N. W. Stephenson, who delivered a lecture on this occasion on "The Art of Illustration."

In the new building it is hoped that more frequent exhibits and lectures will be possible, and the Director desires to be able to begin the purchase of prints, etc. for educational and exhibition purposes.

LIBRARY

The developement of the Museum library has been reviewed in previous annual reports and was described in the October and November issues of the BULLETIN of the Museum for 1908, in connection with the installation of the library in the new building and the formal opening of the public reading room on October 31st. The importance of the library is well shown by the fact that it was moved simultaneously with the offices of the staff and that it was the first department installed in the new building.

The extension of the facilities of the library to the public through a public reading room is the realization of a long-cherished desire of the Director and is especially notable because there is no free public library in the city. The formal opening was the occasion of a silver tea, attended by more than five hundred people and resulting in a profit of over fifty dollars for the benefit of further equipment.

The opening of the reading room to the public on Saturdays has been possible only through the generosity of ladies who have volunteered to act as attendants and to whom the Director wishes to acknowledge his indebtedness and deep appreciation.

The routine work of the library has been carried by Mr. Sass and later by Mr. Weston. The ample space of the new stack room has allowed a better arrangement of the books, but the need of a trained librarian, emphasized in the report for 1907, has now become imperative and the Director anticipates the filling of this position at an early date.

The library is especially indebted to Mr. and Mrs. H. B. Sewell, who have presented twenty-five books of popular science, eight volumes of *Country Life*, and subscriptions for 1909 to *Country Life*, *Outing*, *Outdoor Life*, *Recreation*, *Field and Stream*, *Forest and Stream*, and *Bird Lore*; to Mrs. Henry S. Holmes, for three framed Audubon plates; to Mr. Henry P. Williams, for books, to Mr. Fitzhugh Salley, for a subscription to the *Auk*; and to Miss Henrietta Murdoch for three volumes of the *National Geographic Magazine* with a subscription for 1909.

The library is receiving many valuable publications of learned societies and other Museums and for the maintenance and extension of these exchanges publications of a research character, such as the proposed series of "Contributions from the Museum," are necessary in addition to the BULLETIN.

Funds for the purchase of books and technical journals are also needed.

PUBLICATION

The BULLETIN has been published regularly during the year and has, as usual, constituted an important organ of communication between the Museum and the people of Charleston, besides affording a basis of exchange which is of great importance to the library.

To the newspapers of Charleston the Museum is indebted for strong editorial support, as well as for the freedom with which they have opened their columns to notices of Museum activities, and for the printing of articles from the BULLETIN and news items. The BULLETIN has also been favorably reviewed in *Science* during the year.

In the past two annual reports attention has been called to the desirability of providing for the publication of a series of research contributions from the Museum. Such a series is necessary to the proper maintenance and extension of the exchanges which form one of the most important parts of the Museum library, and, with the extension of the Biological Survey, the need of such a medium of publication will increase.

The manuscript of a work worthy the distinction of initiating such a series is now in the hands of the Director and its prompt publication is one of the important duties of the coming year. Such publications will reflect credit not only upon the Museum but upon the community which has in the past produced so many distinguished scientific works.

PUBLIC INSTRUCTION

This department of the Museum has attained gratifying and encouraging success through the medium of the Natural History Society. The work of the society has been confined to bird-study, calls for the organization of other sections having to be denied for want of leaders to conduct them, and the growing interest aroused by the work is an indication of the wide possibilities of educational activity open to the Museum.

The Natural History Society was organized under the auspices of the Museum, in the Spring of 1905, and has furnished the data for the bird-records which have been maintained by the Museum for three years, as well as doing an important educational work through its meetings and field excursions. During the year

the membership has increased from 16 to 55 members. On the 22nd of February the society enjoyed a particularly successful excursion by launch among the sea islands, through the courtesy of a friend of the Museum, and this did much to stimulate interest.

Public lectures have been given by the Director, on "The Treasures of the Charleston Museum," in April, and by Mr. N. W. Stephenson, on "The Art of Illustration," in May. Other formal lectures have been prevented by the confusion of moving but the following informal lectures have been given at the meetings of the Natural History Society:—January 23, "Birds of the Past;" May 7, "Birds Observed in Charleston;" November 5, "Ancestors of Birds;" all by Mr. H. R. Sass, and on December 3, "Feathers," by the Director.

During the early part of the year a number of teachers visited the Museum with their classes, and either had the lecture room and specimens placed at their disposal or listened to a talk by a member of the staff. As soon as the exhibits are available in the new building this work will be renewed and more thoroughly organized.

The circulating exhibit of the iron and steel industry, which was completed in December, 1907, has been used by a number of teachers in the public schools and it is important that other circulating exhibits be made available for this work.

A much-needed addition to the collection of local birds for educational work is now possible through the action of the Natural History Society in voting a portion of its funds for the purchase of specimens for this purpose. A number of birds have already been purchased with a sum of \$15 given for the purpose by a friend of the Museum.

BIOLOGICAL SURVEY

This department has continued the bird-records in the same

form as before, but with gratifying increase in fullness. All but 12 of the species recorded during the two previous years have been reported in 1908 and 31 species hitherto unreported in the survey have been added to the list, bringing the total number of species now on record up to 215. This work has been carried on by members of the Natural History Society and will be presented in the form of a summary in the February and March issues of the BULLETIN of the Museum. The following more noteworthy records may be mentioned here:—the taking of a Red-throated Diver on November 21, by Mr. Samuel Lap-ham, Jr.; the discovery of breeding colonies of the Snowy Heron, by Mr. H. R. Sass; records for the American Coot in summer, the Canvas-backed Duck (a rare winter visitant), the Least Bittern in the City; and the breeding of Bachman's and Swainson's Warblers, observed by Mr. F. M. Weston, Jr., in company with Mr. Arthur T. Wayne, honorary curator of birds.

In the maintenance of the collection of living snakes records have been obtained for 14 species in this locality, making a good beginning for this group.

An interesting series of black rats (*Mus rattus*) and of hybrids between this species and the brown rat (*M. norvegicus*) have been obtained from localities in the city. Unsuccessful efforts have been made to secure these rats alive for the purpose of breeding experiments.

Specimens of the cotton rat have also been taken in this vicinity and as opportunity offers the survey of the rodents will be extended.

When the installation of the Museum in the new building is further advanced much more rapid progress with the biological survey will be possible.

PAUL M. REA, *Director*.

NATURAL HISTORY SOCIETY

The January meeting of the Natural History Society was held in the Museum on Thursday, Jan. 7th. Reports of field work were submitted by members, including interesting records for the Osprey which will be discussed in the synopsis of bird records in the February BULLETIN. Professor Rea gave a brief talk on "Bird Skeletons," illustrated with specimens from the Museum.

It is important that all members planning to participate in the special holiday excursion on February 22nd, should attend the February meeting, when arrangements for the excursion will be announced.

CALENDAR OF THE NATURAL HISTORY SOCIETY

February 4th, Thursday. Regular monthly meeting of the Society at the Museum at 4:30 P. M. Lecture by MRS. REA on "Food of Birds and Their Organs of Nutrition." *Visitors welcome.*

February 2nd, Monday. Special holiday field trip by launch. *Arrangements to be announced at the February meeting.*

The Charleston Museum

UNDER THE AUSPICES OF THE COLLEGE OF CHARLESTON

Sustaining Members

WILLIAM M. BIRD	JULIAN MITCHELL
J. P. KENNEDY BRYAN	T. MOULTRIE MORDECAI
WARING P. CARRINGTON	JAMES S. MURDOCH
MRS. N. M. DURANT	CAPT. THOMAS PINCKNEY
JOHN F. FICKEN	J. R. PRINGLE RAVENEL
WILSON G. HARVEY	JOHN R. READ
WILLIAM G. HINSON	HON. R. GOODWYN RHETT
GEORGE S. HOLMES	HENRY B. SEWELL
MRS. HENRY S. HOLMES	MRS. HENRY B. SEWELL
MISS AGNES K. IRVING	HENRY A. M. SMITH
SAMUEL LAPHAM	SAMUEL G. STONEY
WILLIAM J. McCORMACK	GEORGE W. WILLIAMS
HENRY P. WILLIAMS	

Annual Members

DR. SARAH C. ALLEN	J. ROSS HANAHAN
HON. JOSEPH W. BARNWELL	HENRY S. HOLMES
MRS. WARING P. CARRINGTON	EDWARD W. HUGHES

BULLETIN
OF
THE CHARLESTON MUSEUM

EDITED BY
PAUL M. REA

**LOCAL FAUNA—A PRELIMINARY SURVEY OF
THE BIRDS OF THE COAST REGION
OF SOUTH CAROLINA**

The Charleston Museum

UNDER THE AUSPICES OF THE COLLEGE OF CHARLESTON

Director

PAUL M. REA

Assistant

FRANCIS M. WESTON, JR.

Librarian

ELIZABETH VAN HOEVENBERG

Honorary Curators

WM. G. MAZYCK.....	<i>Conchology</i>
DANIEL S. MARTIN.....	<i>Geology</i>
ARTHUR T. WAYNE.....	<i>Ornithology</i>
NATHANIEL W. STEPHENSON.....	<i>Art</i>

THE CHARLESTON MUSEUM was in existence as early as 1777 under the auspices of the Charleston Library Society, was transferred to the Literary and Philosophical Society of South Carolina in 1815, to the Medical School in 1828, and to the College of Charleston in 1850. In 1907 a building was provided by the City and the name changed to The Charleston Museum.

The Museum is dependent upon dues from members and private subscriptions for all permanent improvements, for increase of the collections, and for maintenance of its educational and scientific work.

The membership fees are:—

ANNUAL MEMBERS.....	\$ 10	PATRONS.....	\$ 500
SUSTAINING MEMBERS.....	25	BENEFACTORS.....	1000

The privileges of members include admission on pay days, tickets to members' lecture courses, and copies of Museum publications.

THE BULLETIN OF THE CHARLESTON MUSEUM is published monthly, from October to May, by the Museum and is entered at the Post Office at Charleston, S. C., as second class matter.

BULLETIN

OF

THE CHARLESTON MUSEUM

VOL. 5 CHARLESTON, S. C., FEBRUARY, 1909 No. 2

LOCAL FAUNA

A PRELIMINARY SURVEY OF THE BIRDS OF THE COAST REGION OF SOUTH CAROLINA

The Charleston Natural History Society was organized under the auspices of the Museum in the spring of 1905 for the two-fold purpose of stimulating an interest in natural history in Charleston and of assisting the Museum in a biological survey of the coast region of the state. Since the autumn of 1905 the society has devoted itself to a study of birds. Most of its work has been educational and the great majority of the records of the survey were made by Messrs. H. R. Sass and F. M. Weston, Jr. Other members of the society contributed records for limited periods or for common species, while Mr. A. T. Wayne and Rev. Robert Wilson, honorary members, contributed interesting and important records from time to time.

The coastal plain in South Carolina is approximately one hundred miles wide and one hundred and ninety miles long, and forms the natural field for the biological survey of the Charleston Museum. Bird records however have not extended beyond a strip twenty-five miles wide between the Edisto and Pee Dee Rivers. Within this area the haunts of swamp, marsh, and beach birds have been visited irregularly. The incompleteness

of the records for some of the ducks, shore birds, sparrows, etc., is due to difficulty in distinguishing shy or similar species in the field. The most complete records are for land birds in and immediately about Charleston.

The most important results have been the finding of Bewick's Wren on the coast, establishing the abundance of Worthington's Marsh Wren near Charleston, discovery of breeding colonies of Snowy Herons, records for the Little Blue Heron in winter elsewhere than on the sea-islands, rare records for the Frigate Bird, Red-throated Diver, and Red-breasted Nuthatch, winter records for the Carolina Rail, summer records for the American Coot, and late records for the Black and White Creeper.

When this survey was begun the only available list of birds of the state was that published by Coues,¹ which was based chiefly upon work in the vicinity of Columbia and which proved of little use for the coast.

This circumstance would have made the entire work extremely difficult had not Mr. Arthur T. Wayne, honorary curator of birds in the Museum and an honorary member of the society, supplied the local status of the species observed by him during twenty-five years of ornithological work. When the records of the survey are insufficient to establish the local status of a species, the local status as furnished by Mr. Wayne is enclosed in square brackets []. Species are stated to breed only when shown to do so by the records of the survey.

In addition to the bibliographical references in the footnotes attention should be called to the numerous publications of Mr. A. T. Wayne in the Auk during many years, to a paper by Mr. H. R. Sass on the "Bird Life of a City Garden" in the BULLETIN,² and to the annual summaries of the bird records of the Natural

¹Synopsis of the birds of South Carolina. Proc. Boston Soc. Nat. Hist., Vol. 22, pp. 104-127, Oct., 1868.

²Vol. 2, No. 7, Nov., 1906 and Vol. 3, No. 6, p. 53, Oct., 1907.

History Society for 1906 and 1907, also published in the BULLETIN.¹

Since the Museum began its survey Mr. Wayne has embodied his work of the past twenty-five years in a book on the ornithology of the state, which will soon be published by the Museum. For this reason none of his records are given in this paper unless reported by him to the Museum.

1. **Horned Grebe.**—w.v.² Oct. 26–Apr. 4. Found in both fresh and salt water, but far commoner in the latter. *City*; Colonial Lake.

2. **Pied-billed Grebe.**—P.R.³ Rather rare. Found oftener in fresh than in salt water.

3. **Great Northern Diver; Loon.**—w.v. Oct. 19–Apr. 3. A not uncommon bird of the harbor and rivers. *City*; twice seen flying over.

4. **Red-throated Diver.**—w.v. Irregular. The only record is an immature specimen, shot from South Battery, Nov. 21, 1908, by Mr. Samuel Lapham, Jr.⁴

5. **Herring Gull.**—w.v. } On account of the difficulty of dis-

6. **Ring-billed Gull.**—w.v. } tinguishing these two species no reliable migration records have been made. Both are abundant on the harbor and around the wharves.

7. **Laughing Gull.**—w.v. Late Sept.–mid-Apr. Abundant over harbor and around the wharves.

8. **Bonaparte's Gull.**—w.v. Nov. 29–Apr. 30. Abundant over harbor and around the wharves.

9. **Caspian Tern.**—[P.R.] } Rather rare. The two species can

10. **Royal Tern.**—[S.R.] } not be distinguished without taking specimens.

11. **Forster's Tern.**—[P.R.] } On account of the difficulty of dis-

12. **Common Tern.**—[T.v.⁵] } tinguishing these two species with-

¹Vol. 3, No. 5, May, 1907 and Vol. 4, No. 2, Feb., 1908.

²Winter Resident.

³Permanent Resident.

⁴Spec. No. 968. See BULL. CHAS. MUS., Vol. 4, No. 8, p. 73, Dec., 1908.

⁵Transient Visitant, during migrations.

out taking specimens, but two records have been made for the first, and none for the second.

13. **Least Tern.**—s.r.¹ Breeds. May 9–Aug. 18 (Oct. 3?). Common locally on the sea-islands.

14. **Black Tern.**—t.v. Aug. 1–Sept. 18. Not seen during the spring migration. It is very common in the late summer on some of the sea-islands. *City*; occasionally seen flying over.

15. **Black Skimmer.**—s.r. May 9–Oct. 15 (Oct. 25?). Very common on marsh creeks and sounds. It has been seen feeding in the shallows bordering the *City*.

16. **Snakebird.**—s.r. Apr. 13–Aug. 31. Rare. Found only in large fresh-water swamps.

17. **Double-crested Cormorant.**—[w.v.] Migration dates of both

18. **Florida Comorant.**—[s.r.] species uncertain on account of the similarity between the two forms. Common over the marshes except during the late spring and early summer. *City*; seen often from the Battery.

19. **Brown Pelican.**—s.r. Mar. 24 (23?)–Sept. 18. Generally seen on the sea-islands, but sometimes found as far as ten miles up the rivers. *City*; one record.²

20. **Frigate Bird.**—Accidental. One record, Oct. 20, 1906, Sullivan's Island.³

21. **Red-breasted Merganser.**—w.v. Abundant in open sounds and marsh creeks. Migration dates uncertain.

22. **Hooded Merganser.**—w.v. Nov. 9–May 2. May be common locally, but has seldom been recorded.

23. **Mallard Duck.**—w.v. Abundant in rice-fields. Migration dates unreliable.

24. **Black Duck.**—w.v. Oct. 30–Mar. 11. Not as common as the last, but recorded more regularly as it is often found in salt water. Both this species and the last are known as "English" ducks.

¹Summer Resident.

²BULL. CHAS. MUS., Vol. 2, No. 7, p. 58, Nov., 1906.

³Spec. No. 946. See *Ibid.*, Vol. 2, No. 7, pp. 66–67, Nov., 1906.

25. **Pintail Duck.**—[w.v.] May be common locally, but reported only once by the survey—Feb. 10–19, 1906.

26. **Wood Duck.**—P. R. Breeds. Now quite rare. Found only in large fresh-water swamps and backwaters.

27. **Canvasback Duck.**—[w.v.] Rare. Two records, Mar. 18, 1906 and Feb. 4, 1908.¹

28. **Greater Scaup Duck.**—w.v. } Abundant on open water, both

29. **Lesser Scaup Duck.**—w.v. } fresh and salt. These two species cannot be distinguished in the field without taking specimens. Migration dates uncertain. *City*; rare; Colonial Lake.

30. **Ring-necked Duck.**—[w.v.] One record—Feb. 8, 1908.

31. **American Golden-eye.**—[w.v.] Rare and very shy. Very few records have been made.

32. **Bufflehead.**—[w.v.] May be common locally, but seldom recorded.

33. **Surf Scoter.**—[w.v.] Oct. 24, 1906 (Mr. Wayne's earliest record).

34. **Ruddy Duck.**—[w.v.] One record, Feb. 10–19, 1906.

35. **Canada Goose.**—[w.v.] Occasionally seen during migration flying far overhead. *City*.

36. **Wood Ibis.**—[P. R.] Mar.–Oct. Very common in marshes behind the sea-islands. One was seen on April 13, 1908, in the swamp at Otranto.

37. **American Bittern.**—[P. R.] Rare. Generally found in swamps and marshes. *City*; a specimen was shot from a tree on the Porter Military Academy campus, Jan. 9, 1909, by Master Burnham Chamberlain.

38. **Least Bittern.**—S. R. Apr. 9–Sept. 11. A rare bird of the salt marshes and fresh-water swamps. *City*; three were seen, and one taken, in gardens on Tradd St., Apr. 9, 1908.²

39. **Great Blue Heron.**—P. R. Breeds. Common in salt marshes and also found in fresh-water swamps and rice-fields. Its hoarse croak is often heard at night in the marshes. *City*; South Battery, and flying over.

¹BULL. CHAS. MUS., Vol. 4, No. 3, p. 34, Mar., 1908.

²Ibid, Vol. 4, No. 5, p. 49, May, 1908.

40. **American Egret.**—s. r. Apr. 13–Nov. 4. Rather rare. Found both in salt marshes and fresh-water swamps.

41. **Snowy Heron.**—s. r. Breeds. May 15–Aug. 12. Supposed for many years to be extinct, but two strong breeding colonies were discovered, May 15, 1908, by Mr. Herbert R. Sass. These colonies had located themselves on small hammocks in the marsh within a few miles of the City.¹

42. **Louisiana Heron.**—[p. r.] Breeds. A very common inhabitant of the salt marshes. It breeds both on hammocks in the marsh, and in fresh-water swamps. *City*; rare.

43. **Little Blue Heron.**—p. r. Breeds. Found with the Louisiana Heron, but far more numerous.

44. **Green Heron.**—[p. r.] Breeds. Abundant in marshes. *City*; common.

45. **Black-crowned Night Heron.**—p. r. Breeds. Rather rare except during the migrations, when its calls are heard through the night. It has been seen several times in the City.

46. **Yellow-crowned Night Heron.**—[s. r.] Very rare. Only one authentic record, Mar. 28, 1908, but this species is probably among the migrants which make themselves heard so abundantly at night.

47. **Limpkin.**—Accidental. The only record for this region was made, July, 1904, when Mr. W. L. Harris took a specimen in his yard on Water St.²

48. **King Rail.**—[p. r.] Abundant in rice-fields and fresh-water marshes.

49. **Clapper Rail.**—[w. v.] } Abundant everywhere

50. **Wayne's Clapper Rail.**—p. r. Breeds. } in the salt marshes. It has been seen several times in the streets and yards of the lower part of the City.

51. **Virginia Rail.**—[w. v.] One record, Oct. 2, 1908.

52. **Carolina Rail; "Coot."**—w. v. Sept.–Apr. Very common in fresh-water swamps and rice-fields. Supposed to be a

¹BULL. CHAS. MUS., Vol. 4, No. 5, pp. 47–48, May, 1908. Auk, Vol. 25, No. 3, pp. 313–314, July, 1908. Bird Lore, Vol. 10, No. 4, pp. 160–162, July–August, 1908. Spec. No. 227, CHAS. MUS.

²BULL. CHAS. MUS., Vol. 2, No. 6, p. 55, Oct., 1906.

transient visitant until Feb. 3, 1909, when two specimens were taken at Otranto.

53. **Yellow Rail.**—[w.v.] Very rare. Found only in wet broom-grass fields. It lies very close and can be flushed only with a good dog.

54. **Purple Gallinule.**—[s. r.] Breeds. A bird of the fresh-water swamps. Migration records uncertain.

55. **Florida Gallinule.**—[p. r.] A common bird of the fresh-water swamps, but occasionally found in salt water. *City*; one was taken, May 19, 1906, while feeding on the mud-flats at the foot of Council St.¹

56. **American Coot.**—p. r.? Abundant in winter in fresh-water swamps and marshes. Supposed to be a winter visitant until July and August, 1908, when Mr. H. R. Sass found it in numbers at Otranto.

57. **Woodcock.**—[p. r.] Now very rare except in periods of extremely cold weather. A bird of bogs and swamps. *City*; snow-storm of 1899.

58. **Wilson's Snipe.**—[w. v.] Rare. A bird of swampy fields.

59. **Dowitcher.**—[p. r.] One record, Morris Island, Apr. 28, 1908.

60. **White-rumped Sandpiper.**—[t. v.] Very rare. One record, Isle of Palms, May 16, 1908.

61. **Least Sandpiper.**—[t. v.] Common on sea-beaches, but seldom recorded by the survey.

62. **Red-backed Sandpiper.**—[w. v.] A common bird of the marshes and mud-flats as well as of the beaches. Very few records have been made.

63. **Semipalmated Sandpiper.**—[t. v.] One record, May 16, 1908.

64. **Western Sandpiper.**—[w. v.] Common. A bird of the mud flats as well as of the beaches.

65. **Sanderling.**—[p. r.] Common in winter. Found only on ocean beaches.

¹Spec. No. 947, CHAS. MUSE.

66. **Greater Yellowlegs.**—[P. R.] [Common during migrations.] A bird of the marshes. One or two records only.

67. **Lesser Yellowlegs.**—[T. v.] Probably common in the salt marshes, but the only record made is doubtful.

68. **Willet.**—P. R. Breeds. A common and very noisy bird of the salt marshes.

69. **Bartramian Sandpiper.**—[T. v.] Very rare. A bird of the upland fields.

70. **Spotted Sandpiper.**—P. R. Abundant during the migrations. A bird of the marsh rather than of the beach.

71. **Hudsonian Curlew.**—T. v. Abundant, occurring in large flocks in the marshes.

72. **Black-bellied Plover.**—[P. R.] Very common except during the breeding season. Found alike on mud-flats and sand beaches. *City*; South Battery, rare.

73. **Killdeer Plover.**—W. v. Nov. 1–Apr. 1. Abundant. Found more often in the fields, but also to be seen on the mud-flats. *City*; rather rare.

74. **Semipalmated Plover.**—[P. R.] Common on sea-islands, but very few records have been made.

75. **Wilson's Plover.**—[S. R.] Breeds. Very few records.

76. **Ruddy Turnstone.**—[P. R.] Recorded in spring and summer on mud-flats and sea-beaches.

77. **Oystercatcher.**—[P. R.] Probably common, but only comparatively few records have been made. A bird of the marshes as well as of the beaches.

78. **Bob-White.**—P. R. Breeds. Common. Found in woods and fields. *City*; rare.

79. **Wild Turkey.**—[P. R.] Now very rare. Found only in and near large swamps.

80. **Carolina Dove.**—P. R. Breeds. Abundant. Feeds only on bare ground, both in fields and among the sand dunes on the sea-islands. *City*; flying over, rare.

81. **Ground Dove; Mourning Dove.**—p. r. Common locally. Formerly common in the City.

82. **Turkey Buzzard.**—p. r. Very common. *City*; common.

83. **Black Vulture.**—p. r. Abundant. Often seen in the City streets, and is a common daily visitor at the Market.

84. **Swallow-tailed Kite.**—[s. r.] Very rare. One record, Apr. 14, 1906.

85. **Mississippi Kite.**—[s. r.] Very rare. One record, May 2, 1908.

86. **Marsh Hawk.**—w. v. Sept. 7–Mar. 31. Fairly common. Generally seen circling low over fields and marshes. The adult male is a rare bird.

87. **Sharp-shinned Hawk.**—w. v. Sept. 2–Apr. 8. Fairly common. *City*; rather rare.

88. **Cooper's Hawk.**—[p. r.] Rather rare. Not many reliable records have been made. *City*; rare.

89. **Red-tailed Hawk.**—w. v. Aug. 28–Mar. 24. Fairly common locally. *City*; rare.

90. **Florida Red-shouldered Hawk.**—[p. r.] Fairly common, but comparatively seldom recorded.

91. **Bald Eagle.**—p. r. Breeds. Fairly common. Unlike most birds, this species breeds in winter, hatching its young about the end of January. *City*; flying over, rare.

92. **Duck Hawk.**—[w. v.] Very rare. One record, Nov. 28, 1907.

93. **Pigeon Hawk.**—[t. v.] Rare. Oct. and Nov. *City*; Oct. 9, 1907.

94. **Sparrow Hawk.**—[p. r.] Common except in summer.

95. **Fish Hawk; Osprey.**—s. r. Breeds. Feb. 28–Dec. 6. Common over both fresh and salt water. *City*; flying over, fairly common.

96. **Barn Owl.**—[p. r.] May be fairly common, but very few records have been made, most of them being for birds seen or taken in some loft or church steeple. *City*; rare.

97. **Florida Barred Owl.**—[P. R.] Rather rare. Found in swamps and deep woods, where it may sometimes be seen flying about by day. *City*; rare.

98. **Florida Screech Owl.**—[P. R.] Rather rare. Very few records have been made because, unless the bird utters its call, it passes unobserved.

99. **Great Horned Owl.**—[P. R.] Breeds. Rare. A bird of the deep woods, but sometimes found, at night, around poultry yards.

100. **Yellow-billed Cuckoo; Rain-Crow.**—S. R. Breeds. Apr. 10–Nov. 2. A bird of the open woods and wood edges. *City*; common.

101. **Belted Kingfisher.**—P. R. Breeds. Common over marshes and streams. *City*; fairly common.

102. **Southern Hairy Woodpecker.**—[P. R.] Found generally in deep woods or swamps. *City*; rare.

103. **Southern Downy Woodpecker.**—P. R. A bird of hedges and open woods, as well as of denser growth. *City*; rare.

104. **Red-cockaded Woodpecker.**—P. R. Found only in extensive pine woods.

105. **Yellow-bellied Sapsucker.**—W. V. Oct. 10–Mar. 28. Not uncommon in woods. *City*; rather rare.

106. **Pileated Woodpecker.**—[P. R.] Rather rare. Found in swamps and pine woods.

107. **Red-headed Woodpecker.**—P. R. Breeds. Winters irregularly. Abundant in summer. *City*; rare.

108. **Red-bellied Woodpecker.**—P. R. A bird of swamps and deep woods. *City*; very rare.

109. **Flicker.**—P. R. Breeds. Abundant. Found on the ground as often as in trees. *City*; fairly common.

110. **Chuck=will's=widow.**—S. R. Breeds. Mar. 23–Aug. 28. Abundant in woods both on the mainland and on the sea-islands. Its eggs are laid upon the bare ground. *City*; College Campus, Apr. 24, 1906.

111. **Whip=poor=will.**—W. V. Nov. 25–Jan. 31. Rare. Seen only

in the late evening and at night, generally in the woods.

112. **Nighthawk; Bullbat.**—s. r. [Breeds.] Apr. 13–Oct. 6 (Dec. 1?). Common in evening over both fields and woods. Occasional—seen at mid-day. *City*; rather rare, sometimes abundant during migrations.

113. **Chimney Swift.**—s. r. Breeds. Mar. 26–Oct. 28 (very late). Abundant. Far more numerous in the city than in the country.

114. **Ruby-throated Hummingbird.**—s. r. Breeds. Apr. 4–Oct. 10. A bird of both woods and fields. *City*; fairly common.

115. **Kingbird.**—s. r. Breeds. Apr. 4–Oct. 4. Abundant in fields. *City*; common, breeds.

116. **Crested Flycatcher.**—s. r. Breeds. Apr. 3–Sept. 21. Abundant in both open and wooded country. *City*; common, breeds.

117. **Phoebe.**—w. v. Sept. 29–Mar. 17. Common in both woods and fields. *City*; fairly common.

118. **Wood Pewee.**—s. r. Apr. 18–Oct. 9. Very common in pine woods. *City*; rare.

119. **Acadian Flycatcher.**—[s. r.] Rare? A bird of the deep swamps. Recorded but once or twice.

120. **Blue Jay.**—p. r. Breeds. Abundant. *City*; rare. Bred on College of Charleston Campus in 1907 and 1908.

121. **American Crow.**—p. r. } Abundant everywhere. Not to

122. **Fish Crow.**—p. r. Breeds. } be distinguished in the field without taking specimens. *City*; common.

123. **Bobolink; Ricebird.**—t. v. Apr. 23–May 13, Aug. 26–Nov. 9. Not common in spring. Abundant in fall, where it is found in marshes, rice-fields, and grass fields. *City*; very rare in spring; in fall, abundant flying over at night.

124. **Cowbird.**—[w. v.] Rare? Only one reliable record, Mar. 14, 1908.

125. **Red-winged Blackbird.**—p. r. Breeds. A bird of the fields and marshes. *City*; flying over, rare.

126. **Meadowlark.**—[p. r.] Abundant in winter; rare in summer. A bird of the fields. *City*; rather rare.

127. **Orchard Oriole.**—S. R. Breeds. Apr. 6–Aug. 5. Abundant. Well known locally by the name “Sanguilla.” *City*; common, breeds.

128. **Rusty Grackle.**—[w.v.]. Rare. Seldom recorded.

129. **Florida Grackle.**—P. R. Breeds. Abundant in rice-fields and open swamps. Found also in marshes. The nest is built over the water in swamps.

130. **Boat-tailed Grackle; Jackdaw.**—P. R. Breeds. Abundant in marshes and fields. Generally breeds on marsh hammocks. *City*; flying over, rare.

131. **Purple Finch.**—w.v. Rare. Found sometimes in large flocks in February, when the leaf-buds, upon which it feeds, are swelling. *City*; February and March; rare.

132. **Goldfinch.**—w.v. Oct. 16 (Mr. Wayne's earliest record)–Apr. 25. Fairly common, particularly in swamps. *City*; rather rare until late February and March when it is sometimes abundant.

133. **Pine Siskin.**—w.v. Irregular. Two records; Mar. 18, 1906, and Feb. 28, 1909.

134. **Vesper Sparrow.**—w.v. Oct. 13–Apr. 7. Abundant. Found in fields. *City*; very rare.

135. **Ipswich Sparrow.**—[w.v.] Very rare. Found only in restricted areas among the sand dunes of some of the sea-islands. Reported to the survey by Mr. Wayne, Nov. 6, 1906.

136. **Savanna Sparrow.**—w.v. Sept. 28–May 4. Abundant. Found in fields, along edge of the marsh, and among the sand dunes of the sea-islands. *City*; West Point Mills, fairly common.

137. **Grasshopper Sparrow.**—[w.v.] May be common, but seldom recorded on account of its shyness. Found in grassy fields.

138. **Henslow's Sparrow.**—w.v. Irregular and very rare. Two records, Nov. 28 and Dec. 14, 1907.

139. **Leconte's Sparrow.**—w.v. Even more rare than [the preceding. One record, Nov. 28, 1907. Both species are found only in large broom-grass fields.

(To be continued.)

BULLETIN
OF
THE CHARLESTON MUSEUM

EDITED BY
PAUL M. REA

THE NEEDS OF THE MUSEUM
LOCAL FAUNA—A PRELIMINARY SURVEY OF
THE BIRDS OF THE COAST REGION
OF SOUTH CAROLINA

Volume V, Number 3

MARCH, 1909

The Charleston Museum

UNDER THE AUSPICES OF THE COLLEGE OF CHARLESTON

Director

PAUL M. REA

Assistant

FRANCIS M. WESTON, JR.

Librarian

ELIZABETH VAN HOEVENBERG

Honorary Curators

WM. G. MAZYCK.....	<i>Conchology</i>
DANIEL S. MARTIN.....	<i>Geology</i>
ARTHUR T. WAYNE.....	<i>Ornithology</i>
NATHANIEL W. STEPHENSON.....	<i>Art</i>

THE CHARLESTON MUSEUM was in existence as early as 1777 under the auspices of the Charleston Library Society, was transferred to the Literary and Philosophical Society of South Carolina in 1815, to the Medical School in 1828, and to the College of Charleston in 1850. In 1907 a building was provided by the City and the name changed to The Charleston Museum.

The Museum is dependent upon dues from members and private subscriptions for all permanent improvements, for increase of the collections, and for maintenance of its educational and scientific work.

The membership fees are:—

ANNUAL MEMBERS.....	\$ 10	PATRONS	\$ 500
SUSTAINING MEMBERS....	25	BENEFACTORS	1000

The privileges of members include admission on pay days, tickets to members' lecture courses, and copies of Museum publications.

THE BULLETIN OF THE CHARLESTON MUSEUM is published monthly, from October to May, by the Museum and is entered at the Post Office at Charleston, S. C., as second class matter.

BULLETIN

OF

THE CHARLESTON MUSEUM

VOL. 5 CHARLESTON, S. C., MARCH, 1909 No. 3

THE NEEDS OF THE MUSEUM.

The recent appropriation by City Council of the necessary funds for the painting of the exterior of the Museum building and the completion of the main exhibition hall, coupled with the revision of the collections which has been going on during the past five years, brings the Museum to a gratifying change in the nature of its work. Hitherto our energies have been devoted to the rescue of the Museum from past neglect and to bringing before the community its possibilities of future usefulness in scientific and educational work. Money has been expended upon a new building, upon physical equipment, and upon services for revision of collections and for cataloging books and specimens, yet the public has seen even less of the Museum as the work has progressed and has begun to think that a Museum eats money as a horse eats grass. It is true that a large museum is not inexpensive and that the people of Charleston are only beginning to realize the scope of their Museum, but the work of the past five years has laid a firm foundation for future work and brought the Museum to the point of installation of the exhibition collections—where visible results can be obtained.

The final preparation for installation is the addition of a printing outfit for the preparation of labels, and this is now

being done through the generosity of two members of the Museum.

Blue prints and specifications for exhibition cases have been prepared and the first of these cases is about to be erected for agricultural exhibits, the entire cost of installation being borne by the Agricultural Society.

It is of great importance that the birds and larger mammals, of which there are many good specimens in the old museum, should be installed at once in new cases in the main hall, where they can be under the constant care of curators. The geological department is now ready to begin exhibition and a collection of local shells has been begun.

Now that the building and the ordinary cost of maintenance is provided by City Council the cost of installation must be met by private subscription. A fund of ten thousand dollars is needed for installation. The City is giving for maintenance of the Museum a proportion of its total expenditure, exceeded only by two other American cities, and a corresponding support from private sources will give Charleston a museum in which she may take just pride.

The manifold duties of the director make personal solicitation of contributions an inadequate means of financing this work, and render voluntary support necessary. A recent contribution of money and valuable books from a stranger who has become interested in the Museum through the pages of the BULLETIN should incite the loyal support of our own community.

LOCAL FAUNA

A PRELIMINARY SURVEY OF THE BIRDS OF THE COAST REGION OF SOUTH CAROLINA

Concluded

140. **Sharp-tailed Sparrow.**—[w. v.] Sept. 29—? May be common, but seldom recorded.

141. **Acadian Sharp-tailed Sparrow.**—[w. v.] One record, Nov. 28, 1907. Both this form and the preceding are found in marshes and along marsh edges.

142. **Seaside Sparrow.**—[w. v.] Sept. 29—? May be common in marshes, but seldom recorded.

143. **White-throated Sparrow.**—w. v. Oct. 22–May 3. Abundant. A bird of the woods and wood edges. *City*; a regular and sometimes fairly common visitor.

144. **Chipping Sparrow.**—[p. r.] Fairly common in winter. Found in fields and along wood edges. *City*; one record, Mar. 18 1908.

145. **Field Sparrow.**—[p. r.] Fairly common along edges of woods and fields. *City*; one record, Apr. 22, 1907.

146. **Junco; Snowbird.**—w. v. Nov. 11–Mar. 25 (very late). Fairly common in open woods and clearings in the woods. *City*; rare.

147. **Bachman's Sparrow.**—p. r. Fairly common in pine woods.

148. **Song Sparrow.**—w. v. Oct. 10–Apr. 21. Abundant everywhere except in woods. *City*; sometimes fairly common.

149. **Swamp Sparrow.**—w. v. Oct. 12–Apr. 28. Abundant. Found in fresh-water marshes, and in damp spots in fields.

150. **Fox Sparrow.**—w. v. Nov. 21–Feb. 14. Fairly common locally. *City*; one record, Jan. 6, 1907.

151. **Chewink; Towhee.**—w. v. Sept. 3–Apr. 14. Abundant. A bird of field edges and open woods. *City*; rare.

152. **Florida Towhee.**—p. r. Breeds. Common. Found with the preceding in open woods. It occurs also in deeper woods and even in swamps.

153. **Cardinal**.—P. R. Breeds. Abundant. A bird of the field edges and open woods. *City*; abundant, breeds.

154. **Blue Grosbeak**.—[s. R.] Now very rare. One record, May, 31 1907.

155. **Nonpareil**.—s. R. Breeds. Apr. 15–Nov. 4. Abundant. *City*; abundant, breeds.

156. **Scarlet Tanager**.—T. v. Very rare. The only two records of the survey for this species, May 3, 1905, and April 29, 1908, were both made in the City.

157. **Summer Tanager**.—s. R. Breeds. Apr. 13–Sept. 27. A very common bird of the woods. *City*; a regular spring and early summer visitor.

158. **Purple Martin**.—s. R. Breeds. Mar. 5–Oct. 24. Abundant everywhere, readily making use of nesting boxes prepared for it.

159. **Barn Swallow**.—T. v. Apr. 13–May 30, July 31–Oct. 29 (very late). Abundant over marshes and fields. *City*; abundant.

160. **Tree Swallow**.—[w. v.] Sept. 9–Nov. 23, March. 5–May 19. Common over fields and marshes. *City*; sometimes seen passing over in large numbers.

161. **Rough-winged Swallow**.—[P. R.] Breeds. Common, but not seen in nearly as large numbers as the two preceding species. Builds its nest under eaves of houses as well as in holes in banks. *City*; occasionally seen flying over in summer.

162. **Waxwing**.—w. v. Oct. 12–May 21 (very late.) Abundant. Until the winter of 1908-09, this species had not been recorded before Dec. 25 (and not in the city until Jan. 28.) It is a bird of the high trees of both woods and swamps. *City*; abundant from early February until the first week in May.

163. **Loggerhead Shrike**.—P. R. Breeds. Abundant. A bird of fields and clearings, seldom found in woods. *City*; common in certain localities; breeds.

164. **Red-eyed Vireo**.—s. R. Apr. 4 (Mar. 31?)–Oct. 23. The song of this species is a very familiar sound in the woods. *City*; a regular and sometimes common visitor.

165. **Yellow-throated Vireo.**—[s. r.] Rare. The only records of the survey are a few for April and September.

166. **Blue-headed Vireo.** [w. v.] May be common in swamps, but seldom reported by the survey.

167. **White-eyed Vireo.**—[p. r.] Abundant except in fall and winter. Found generally along wood edges. *City*; fairly common.

168. **Black and White Creeping Warbler.**—t. v. Apr. 12–May 13, July 16–Dec. 1 (very late). A bird of the woods. *City*; rare in spring, but fairly common in the fall.

169. **Prothonotary Warbler.**—s. r. Breeds. Apr. 4–Sept. 8. A bird of the swamps, building its nest in a stump over water. *City*; very rare.

170. **Swainson's Warbler.**—s. r. Breeds. Very rare. Found only in deep swamps.

171. **Worm-eating Warbler.**—[t. v.] Rare. One record, Sept. 12, 1906.

172. **Bachman's Warbler.**—s. r. Breeds. Mar. 14—? Very rare. Has as yet been found nowhere but in a deep swamp on Mr. Furman's plantation, Wando River.

173. **Parula Warbler.**—s. r. Breeds. Mar. 13–Oct. 22 (very late). An abundant bird of the woods and swamps. *City*; fairly common in spring.

174. **Cape May Warbler.**—Autumnal visitor. One record, Nov. 3, 1906 (Mr. Wayne's latest).

175. **Summer Warbler.**—[s. r.] Apr. 21–May 13, July 18–Sept. 29 (Oct. 2). Found oftenest in trees on the edge of fields. *City*; fairly common.

176. **Black-throated Blue Warbler.**—t. v. May 9–12, Oct. 2–28. Rare in spring and not recorded often in autumn. *City*; a regular autumn visitor.

177. **Myrtle Warbler.**—w. v. Oct. 10–Apr. 28. One of the most abundant winter visitants both in the city and in the country.

178. **Black-poll Warbler.**—t. v. May and September. Rare. Of the few records made, all but one were for the city.

179. **Yellow-throated Warbler.**—P. R. Abundant except in winter, when it is very rare. *City*; very rare.

180. **Black-throated Green Warbler.**—[T. V.] May be common in swamps, but seldom recorded.

181. **Pine Warbler.**—P. R. Abundant in pine woods. One of the few birds whose song is heard through the year. *City*; very rare.

182. **Palm Warbler.**—W. V. Oct. 1–Apr. 18. Rather rare. Found generally in low bushes in woods and in the open. *City*; a regular visitor.

183. **Yellow Palm Warbler.**—T. V. One record, Nov. 2, 1907.

184. **Prairie Warbler.**—[S. R.] Mar. 28–Apr. 22, July 27–Oct. 9. Rather rare. Generally found in low bushes in woods. *City*; rare.

185. **Ovenbird.**—T. V. May, Sept. 15–Oct. 28. Rare. Found in swampy woods. *City*; rare.

186. **Grinnell's (?) Water Thrush.**—T. V. Aug. 2–Oct. 1. Not recorded in spring. The only records made are from the city.

187. **Yellowthroat.**—P. R. Common, particularly during migrations. Found in low bushes along marsh edges and in swampy woods. *City*; rather rare.

188. **Yellow-breasted Chat.**—S. R. Apr. 25–Aug. 24. Common. Found generally in very open woods.

189. **Hooded Warbler.**—S. R. Mar. 28–Sept. 13. Common. Found in swamps and swampy woods. *City*; a rare but regular visitor.

190. **American Redstart.**—T. V. May 11–13, Aug. 19–Oct. 27. Common in woods. *City*; common in fall but very rare in spring.

191. **Titlark.**—W. V. Oct. 25–Mar. 25. Abundant in fields. *City*; sometimes heard flying over.

192. **Mockingbird.**—P. R. Breeds. Abundant, but much less so in winter. Found everywhere but in dense woods. *City*; abundant; breeds.

193. **Catbird.**—W. V. Sept. 5–Apr. 28. Abundant during migrations. *City*; common in certain localities.

194. **Brown Thrasher.**—P. R. Breeds. Abundant. Found on ground in woods and along wood edges. The song of this species rivals that of the mockingbird. *City*; sometimes common.

195. **Carolina Wren.**—P. R. Breeds. Common everywhere. *City*; sometimes fairly common; breeds.

196. **Bewick's Wren.**—Accidental. The only record for the coast region of the state was made Oct. 17, 1907, when Mr. H. R. Sass shot a specimen at the Navy Yard.¹

197. **House Wren.**—w. v. Oct. 19–Apr. 12 (Apr. 13?) Fairly common. Found in low bushes in the open and in open woods. *City*; rare.

198. **Winter Wren.**—w. v. Dec. 10–Mar. 14. Rare. Found in low bushes and about fallen logs in woods.

199. **Short-billed Marsh Wren.**—w. v. May be common locally, but recorded by the survey too seldom to obtain reliable migration dates.

200. **Worthington's Marsh Wren.**—[P. R.] Breeds. Abundant in the salt marshes bordering the harbor,² but not found in any numbers even a few miles away.

201. **Brown Creeper.**—w. v. Oct. 29–Mar. 17. Rare. A bird of the woods. *City*; rare.

202. **Florida White-breasted Nuthatch.**—P. R. Fairly common. A bird of the woods and swamps. *City*; autumn; rare.

203. **Red-breasted Nuthatch.**—w. v. Irregular. The only records of the survey are for October and November, 1906. *City*; Oct. 29–Nov. 2, 1906.

204. **Brown-headed Nuthatch.**—P. R. Breeds. Common. A bird almost exclusively of the pine woods.

¹BULL. CHAS. MUS., Vol. 3, No. 6, p. 54, Oct., 1907. Auk, Vol. 25, No. 1, p. 87, Jan., 1908. Spec. No. 7030, CHAS. MUS.

²BULL. CHAS. MUS., Vol. 3, No. 6, p. 54, Oct., 1907.

205. **Tufted Titmouse**.—P. R. Breeds. Abundant. Found more often in a mixed forest than among pines. *City*; very rare. Oct. 25–29, 1906.

206. **Carolina Chickadee**.—P. R. Breeds. A bird of the woods. Very often found in company with the preceding.

207. **Golden-crowned Kinglet**.—W. V. Oct. 27–Mar. 25. A not uncommon bird of the pine woods, being generally found in the tops of the tallest trees. *City*; a rare and irregular visitor.

208. **Ruby-crowned Kinglet**.—W. V. Oct. 11–Apr. 30. An abundant species in open woods. *City*; a not uncommon visitor in certain localities.

209. **Blue-gray Gnatcatcher**.—[P. R.] Breeds. Abundant in woods in spring, but seldom seen at other times. *City*; rare.

210. **Wood Thrush**.—S. R. Apr. 10–Oct. 7 (Oct. 11?). Rare. A bird of the woods. *City*; College campus, Apr. 10, 1906.

211. **Wilson's Thrush**.—T. V. Sept. 7–19. Rare. Not recorded during spring migration. The only records made are from the city.

212. **Olive-backed Thrush**.—[T. V.]) These two species are diffi-

213. **Gray-cheeked Thrush**.—[T. V.]) cult to distinguish in the field. On May 3, 1908, a city record was made for one of the two, but it cannot be referred definitely to either one.

214. **Hermit Thrush**.—W. V. Oct. 28–Apr. 8. A not uncommon bird of the low growth in woods. *City*; an occasional visitor.

215. **American Robin**.—W. V. Nov. 26–Apr. 16. Abundant locally, occurring sometimes in very large flocks. *City*; rare except in extremely cold weather.

216. **Bluebird**.—P. R. Breeds. A common bird of the fields and open woods. *City*; a rare visitor.

THE END.

BULLETIN
OF
THE CHARLESTON MUSEUM

EDITED BY
PAUL M. REA

A PIEDMONT MINERAL COLLECTION
A LIBRARIAN'S VACATION IN MAINE
THE PINE SISKIN IN THE CITY
NOTES FROM THE MUSEUM

The Charleston Museum

UNDER THE AUSPICES OF THE COLLEGE OF CHARLESTON

Director

PAUL M. REA

Assistant

FRANCIS M. WESTON, JR.

Librarian

ELIZABETH VAN HOEVENBERG

Honorary Curators

WM. G. MAZYCK.....	<i>Conchology</i>
DANIEL S. MARTIN.....	<i>Geology</i>
ARTHUR T. WAYNE.....	<i>Ornithology</i>
NATHANIEL W. STEPHENSON.....	<i>Art</i>

THE CHARLESTON MUSEUM was in existence as early as 1777 under the auspices of the Charleston Library Society, was transferred to the Literary and Philosophical Society of South Carolina in 1815, to the Medical School in 1828, and to the College of Charleston in 1850. In 1907 a building was provided by the City and the name changed to The Charleston Museum.

The Museum is dependent upon dues from members and private subscriptions for all permanent improvements, for increase of the collections, and for maintenance of its educational and scientific work.

The membership fees are:—

ANNUAL MEMBERS.....	\$ 10	PATRONS.....	\$ 500
SUSTAINING MEMBERS.....	25	BENEFACTORS.....	1000

The privileges of members include admission on pay days, tickets to members' lecture courses, and copies of Museum publications.

THE BULLETIN OF THE CHARLESTON MUSEUM is published monthly, from October to May, by the Museum and is entered at the Post Office at Charleston, S. C., as second class matter.

LIBRARY
NEW
BOTANICAL
GARDEN

BULLETIN

OF

THE CHARLESTON MUSEUM

VOL. 5 CHARLESTON, S. C., APRIL, 1909 No. 4

A PIEDMONT MINERAL COLLECTION

Every important museum should seek to gather and exhibit scientific material with reference to some definite object, and not merely in a general and miscellaneous way. Of course, every museum needs, and should have, general collections, to give to visitors and students some idea of the richness and variety of objects comprehended in the great divisions of nature, and to enable them to become acquainted by actual observation with the plants and animals of distant lands and the minerals and fossils of remote and peculiar localities. So far as this is attempted or realized, however, there is of necessity a certain sameness in the contents of museums, and one is to a large extent like another. The same is equally true of libraries and art-collections, also.

But apart from this general work every museum should aim at a specialty of its own,—some branch or department in which it should have, and be known to have, a distinctive character, and to possess material and afford opportunities that cannot be found elsewhere. The first and most obvious form in which this aspect of a museum's work can and should be cultivated, is in the matter of local collections, the illustration, with utmost fulness, of the fauna and flora, the minerals, rocks and fossils

of the neighborhood. This feature has been too often overlooked or neglected, but it is one of high importance to science, and is now becoming recognized much more than before. It is moreover an easy and a most practical field, and one that can be cultivated by every country college at little cost and with real advantage.

The Charleston Museum is fully alive to the value of this side of its work, and is preparing to emphasize it in various departments, in the installation of its fast-increasing material in the new building. In this article, however, the object is to outline a somewhat wider plan of the same kind, in the special field of mineralogy and geology, one that will give a unique and distinctive character to this museum.

The Middle and Southern Atlantic States constitute, in a broad sense, a geographical and geological unit. They all consist of (1) what is known scientifically as the "coastal plain," and popularly as the "low country", extending for a considerable distance inland in a wide belt; then (2) the so-called Piedmont belt, of much older rocks, worn down to a region of hills or rolling country; and (3) the mountain region of the Blue Ridge and the Appalachians. The first of these great zones consists of Tertiary and Cretaceous rocks, with many fossils of those periods; the second, and in parts the third, is chiefly crystalline rocks, some igneous and some metamorphic, containing many interesting and valuable minerals. On passing further westward into the mountains, the crystalline character diminishes, and the rocks become more or less altered sediments, with iron ores and coal-beds and ancient fossils.

Now, throughout this great region, from Virginia to Alabama, there has been much study of the minerals and of the fossils, at many points, but all separate and scattered. The States have their special surveys, and the results of these have been more or less gathered into State collections and exhibits, which may be

seen and examined at the capitals or at other important points, by those who desire to study them, and can take the time to travel from place to place for that purpose. But nowhere has there been even an attempt to form a representative collection, showing the distribution and modes of occurrence of the minerals of the Southern Atlantic States, as a natural province. Absolutely nowhere can such an exhibit be seen, for it does not exist; and yet it would be one of great scientific and practical value. To form such a collection, is the purpose of the geological department of the Charleston Museum. This is intended to be its specialty; so that, when any student desires to acquaint himself with the mineral productions of the Southern country, the Piedmont and the eastern mountain belt, it shall be known that he can find a representative exhibit thereof here.

The idea of such a Southern collection has been for some years in the mind of the honorary curator, and he is hoping now to realize it very soon. A beginning has already been made, and the aid and co-operation of a number of college professors and state geologists have been promised. The State of South Carolina itself will be well represented through the State geologist, Professor Sloan; and arrangements have already been made for obtaining material from North Carolina and Virginia. Of course the work will require time and labor, and it cannot be fully realized at once; but it can be begun at once; and grow from year to year. The result will be a distinctive exhibit, an honor to Charleston and its museum, and a positive and most desirable contribution to American science. It is proposed to designate it as "The Piedmont Collection", not that it will be actually limited to minerals from that division, but it will be so largely made up of them, that this name will best express its characteristic feature.

DANIEL STROBEL MARTIN.

A LIBRARIAN'S VACATION IN MAINE

A librarian having a tired head one summer, carried it to Maine for rest, with instructions to live out of doors as much as possible. In the process of carrying out these directions she discovered that the locality in which she was rusticating, Stoneham, Oxford Co., lay in the midst of a region rich with the semi-precious stones and gem minerals for which the state of Maine is famous. In fact what is regarded as the finest blue beryl which has ever been cut in this country was found within ten miles of this little town, and some twenty miles away, lay the Mt. Mica mine from which many thousands of dollars worth of tourmalines had been extracted since its accidental discovery in 1851 by two nephews of the Hon. Hannibal Hamlin, a distinguished son of Maine. This mine was visited, and found very interesting, but far more so were the many varieties of tourmaline, taken from the mine, and now deposited in the quaint old former jail of Oxford Co.

This small square building with massive stone walls fully three feet in thickness, and still retaining its iron gratings at the windows, and heavy iron door with its huge key, is the present home of the library and the Hamlin Memorial Cabinet.

Here are hundreds of beautiful specimens of tourmaline, uncut crystals and finely cut gems, in black and brown or in delicate greens and pinks shading to white, delicate purple lepidolite, yellow Cookeite, which accompanies the tourmaline, and wonderful crystals of mica, which have given the mine its name.

The story of the building is about as interesting as the collection it houses. When the Grand Trunk Railway was extended through that region the county seat on Paris Hill was left stranded three miles from the railroad. For the convenience of those having business with the county, the county buildings were removed to the nearest rail point, South Paris, and the

abandoned and picturesque jail building was secured for library purposes through the efforts of the ladies of the town, and at the suggestion of the Hon. Hannibal Hamlin, who gave it an endowment fund and who was the means of placing two fine mineral collections in its custody.

E. VAN H.

THE PINE SISKIN IN THE CITY

In the coast country of South Carolina the Pine Siskin (*Spinus pinus*) is a very rare and irregular winter visitant. On April 18 and 19, 1909, I observed a flock of eight or ten in my garden on Legare street. I had heard their notes for some days previous, but was deceived by the similarity to the notes of the goldfinch and did not investigate the birds until the morning of April 18th, when I was astonished to find that they belonged to this rare species. The birds were very tame, kept up a constant twittering and frequented both the tall elms and the lower privet bushes, keeping mainly, however, to the taller trees.

This record is remarkable because of the rarity of the species on the coast, because it has never before been observed in the City, and because these dates are far later than any others on which the bird has been reported on the coast.

Audubon records having shot several Pine Siskins near Charleston in December, 1833, and Mr. Arthur T. Wayne observed them in the winter of 1896-97, when they were common from December 12 till the middle of March, but no other records for this erratic species in this part of the State are known.

The Pine Siskin breeds from the mountains of North Carolina northward into British America, and also in the Rocky and Sierra Nevada Mountains.

HERBERT R. SASS.

NOTES FROM THE MUSEUM

Lack of space has necessitated the omission of the "Notes from the Museum" in the last three issues and we take this opportunity of informing our readers of work which has gone on.

In addition to the usual appropriation for maintenance of the Museum, City Council recently provided special funds for the completion of the building, with the exception of the galleries. These will be completed when required for exhibition. The exterior of the building is being painted, additional skylights installed, and the main hall completed. The grading of the grounds about the building has made substantial progress under the direction of the Park Commissioners.

A case is being constructed for rice and other agricultural exhibits, the cost of which is defrayed by the Agricultural Society and the Rice Committee jointly.

Professor Daniel Strobel Martin, has spent nearly two months at the Museum, bringing near completion the revision of the mineral, rock, and invertebrate fossil collections, of which he is the honorary curator. In addition to his many gifts of recent years, Professor Martin has this year presented to the Museum five hundred choice minerals and fossils, as well as a number of geological books and pamphlets. This department is now well organized for the prosecution of the new work announced on the preceding pages.

Mr. William Brewster, of Cambridge, Mass., has presented to the Museum library a valuable series of ornithological books and pamphlets, including the first three volumes of the *Auk*, ten volumes of *Bird Lore*, nine of *Condor*, six of *Osprey*, nine of the *Journal of the Maine Ornithological Society*, and many important books and author's separates of great value. Mr. Brewster has also enabled the library to purchase Knowlton's

Birds of the World. This is a large book, just published, which will be of great use to both the staff and the public in connection with the foreign birds in the Museum.

In February Miss Elizabeth Van Hoevenberg joined the staff as librarian. Miss Van Hoevenberg is a graduate of the Pratt Institute Library Training School and has been at the Stamford Public Library for nearly twelve years. The importance of our library and its rapid growth have made the need for a trained librarian urgent for some time past.

The Museum has recently inaugurated a wild-flower table in the reading room, where wild-flowers of the season are named and exhibited. Since the Museum has no regular means of collecting, it is dependent largely upon the assistance of friends in the maintenance of this exhibit. The exhibit is in the charge of the librarian. Members of the Natural History Society have taken much interest in this new field of study and may subsequently form a section for botanical studies. This exhibit also affords an opportunity of extending the Biological Survey to include plants. A new record form has been prepared for this work, which will, it is hoped, accomplish as interesting results in time as the survey of the birds already has. Small's *Flora of the Southeastern United States* has been purchased for use in this work, and other botanical books will be added to the library as the work progresses.

Recent accessions include two Emeu eggs from Sydney, Australia. One of the eggs has been handsomely carved by Japanese, the other is in the natural condition.

One of the final preparations for active installation of the exhibition collections is the installation of a printing outfit for preparation of labels. This important improvement is made possible through the generosity of two members of the Museum.

The April meeting of the Natural History Society will be held at the Museum on Thursday, May 6, at 5 P. M. This will be the last formal meeting of the season. Officers for the ensuing term will be elected. On account of the warm weather no further excursions will be organized though it is hoped that members will find opportunity for field work.

Dr. Ezra Brainerd, who studied the violets in the Elliott Herbarium two years ago, recently visited the Museum on his way south.

The Museum has taken steps to promote the enforcement of the City ordinances against the shooting of slings or guns of any description, and appeals for the support of the community at large in its efforts to prevent the wanton destruction of the bird life of our city.

The collection of living snakes has been increased by a fine Copperhead or Highland Moccasin (*Ancistrodon contortrix*), captured April 24, at the Navy Yard, by Mr. F. W. Wamsley. A King Snake (*Ophibolus getulus*) was taken at the same locality by Mr. F. M. Weston, Jr., on April 22. With the return of warm weather, visitors are invited to bring live mice for the snakes, who show natural symptoms of hunger after their long winter fast. A few rats are also desired for the large rattlesnakes.

The Junco was reported by Mr. F. M. Weston, Jr., on March 29, which is the latest record known for this winter visitant. Unfortunately, this observation was received too late to be incorporated in the account of the Junco in the March BULLETIN. Other winter visitants reported later this year than the dates given in the "Preliminary Survey" include the Loon, Apr. 12; Killdeer, Apr. 5; Marsh Hawk, Apr. 11; and Vesper Sparrow, Apr. 12. Earlier records for summer residents include the Egret, Mar. 28; Snowy Heron, Apr. 24; Kingbird, Apr. 3; and Summer Tanager, Apr. 10. The Black Skimmer was seen about April 1, and was abundant on April 12.

BULLETIN
OF
THE CHARLESTON MUSEUM

EDITED BY
PAUL M. REA

THE FLOWER TABLE
LOCAL FAUNA—MOLLUSCA
A METEOROLOGICAL EXHIBIT
NOTES FROM THE MUSEUM

The Charleston Museum

UNDER THE AUSPICES OF THE COLLEGE OF CHARLESTON

Director

PAUL M. REA

Assistant

FRANCIS M. WESTON, JR.

Librarian

ELIZABETH VAN HOEVENBERG

Honorary Curators

WM. G. MAZYCK.....	<i>Conchology</i>
DANIEL S. MARTIN.....	<i>Geology</i>
ARTHUR T. WAYNE.....	<i>Ornithology</i>
NATHANIEL W. STEPHENSON.....	<i>Art</i>

THE CHARLESTON MUSEUM was in existence as early as 1777 under the auspices of the Charleston Library Society, was transferred to the Literary and Philosophical Society of South Carolina in 1815, to the Medical School in 1828, and to the College of Charleston in 1850. In 1907 a building was provided by the City and the name changed to The Charleston Museum.

The Museum is dependent upon dues from members and private subscriptions for all permanent improvements, for increase of the collections, and for maintenance of its educational and scientific work.

The membership fees are:—

ANNUAL MEMBERS.....	\$ 10	PATRONS	\$ 500
SUSTAINING MEMBERS.....	25	BENEFACTORS	1000

The privileges of members include admission on pay days, tickets to members' lecture courses, and copies of Museum publications.

THE BULLETIN OF THE CHARLESTON MUSEUM is published monthly, from October to May, by the Museum and is entered at the Post Office at Charleston, S. C., as second class matter.

BULLETIN

OF

THE CHARLESTON MUSEUM

VOL. 5

CHARLESTON, S. C., MAY, 1909

No. 5

LOCAL FLORA

THE FLOWER TABLE IN THE MUSEUM LIBRARY

For the convenience of those who are interested in our local flora we print below a list of the flowering plants brought to the Museum during the spring. It was noted in the last issue of the BULLETIN that the Biological Survey was being extended by means of the flower table to include in a very informal manner the flowering plants of the coast region, although the Museum has as yet no organized facilities for botanical collecting.

Small's *Flora of the Southeastern United States* has been adopted as the basis of nomenclature in this department of the survey, and herbarium specimens, as well as systematic card records, are preserved at the Museum. The librarian will be pleased to receive flowers for identification and record until August 1.

As a first step toward the determination of periods of flowering the extreme dates on which flowers have been brought in are noted for each species in the following list.

PINE FAMILY. *Pinus palustris*, Long Leaf Pine. Feb. 28.

ARUM FAMILY. *Arisæma triphyllum*, Jack-in-the-pulpit. Mar. 25.

Orontium aquaticum, Golden-club. Mar. 10.

- SPIDERWORT FAMILY. *Tradescantia Virginica*, Spiderwort, Mar. 14.
- PINE-APPLE FAMILY. *Dendropogon usneoides*, Spanish Moss.
- BUNCH-FLOWER FAMILY. *Chamaelirium luteum*, Blazing Star. May 1.
- ONION FAMILY. *Allium striatum*. Mar. 10.
- YUCCA FAMILY. *Yucca aloifolia*, Spanish Bayonet. May 15.
- WAKE-ROBIN FAMILY. *Trillium discolor*. Apr. 12.
- AMARYLLIS FAMILY. *Aletris farinosa*, Colic Root. Apr. 15.
Hypoxis hirsuta, Star Grass. Apr. 8.
Atamosco Atamasco, Easter Lily. Mar. 20, Apr. 8.
- IRIS FAMILY. *Sisyrinchus angustifolium*, Blue-eyed Grass. Apr. 5, 23.
- ORCHID FAMILY. *Limodorum tuberosum*, Grass-pink. Apr. 14.
Pogonia ophioglossoides, Snake-mouth. May 11.
- BAYBERRY FAMILY. *Morella cerifera*, Bayberry. Mar. 25.
- MULBERRY FAMILY. *Broussonetia papyrifera*, Paper Mulberry. Apr. 5.
- ELM FAMILY. *Celtis occidentalis*, Sugarberry. Mar. 30.
- BUCKWHEAT FAMILY. *Polygonum maritimum*, Knotweed. Apr. 16.
- CHICKWEED FAMILY. *Alsine media*, Starwort. Mar. 14.
- PINK FAMILY. *Silene Pennsylvanica*, Wild Pink. Apr. 12.
Silene Virginica, Fire Pink. April 12.
- CROWFOOT FAMILY. *Viorna Viorna*, Leather Flower. Apr. 14.
Ranunculus muricatus, Crowfoot. Mar. 30, Apr. 23.
- MAGNOLIA FAMILY. *Magnolia Virginiana*, Sweet Bay. Apr. 14, May 23.
- POPPY FAMILY. *Sanguinaria Canadensis*, Bloodroot. Apr. 12.
- FUMITORY FAMILY. *Capnoides aureum*, Golden Corydalis. Apr. 5.
Fumaria officinalis, Fumitory. Mar. 14.
- PITCHER-PLANT FAMILY. *Sarracenia minor*, Trumpets. Apr. 14.

- ROSE FAMILY. *Rubus trivialis*, Southern Dewberry. Mar. 10.
Duchesnea Indica, Indian Strawberry. Apr. 1.
Potentilla Canadensis, Cinquefoil. Apr. 5.
Rosa Cherokeeensis, Cherokee Rose. Mar. 31, Apr. 5.
- STRAWBERRY SHRUB FAMILY. *Butneria fertilis*, Carolina Allspice. Apr. 12.
- APPLE FAMILY. *Aronia arbutifolia*, Chokeberry. Mar. 31.
Padus serotina, Wild Cherry. Mar. 25.
Lauracerasus, Cherry-Laurel. Mar. 5.
- PEA FAMILY. *Baptisia villosa*, Wild Indigo. Apr. 12, May 23.
Medicago lupulina, Medic. Apr. 14.
Melilotus officinalis, Yellow Melilot. Apr. 5.
Trifolium agrarium, Hop Clover. Apr. 23.
Cracca spicata, Goat's Rue. May 23.
Erythrina herbacea. May 23.
Vicia Caroliniana, Carolina Vetch. Apr. 12, May 23.
Vicia Texana. Mar. 19.
Vicia sativa, Vetch. Mar. 14.
- GERANIUM FAMILY. *Geranium Carolinianum*, Carolina Crane's-bill. Mar. 14.
- FLAX FAMILY. *Linum usitatissimum*, Common Flax. May 1.
- OXALIS FAMILY. *Ionoxalis violaceæ*, Purple Wood-sorrel. Mar. 14, Apr. 18.
Xanthoxalis stricta, Lady's Sorrel. Mar. 10, Apr. 18.
- MAHOGANY FAMILY. *Melia Azedarach*, China Tree. Apr. 1.
- MILKWORT FAMILY. *Polygala sp.*, Apr. 14, May 23.
- SPURGE FAMILY. *Cnidioscolus stimulosus*, Spurge Nettle. Mar. 25, May 23.
- HOLLY FAMILY. *Ilex vomitoria*, Cassine. Apr. 1.
- BUCKEYE FAMILY. *Aesculus Paria*, Red Buckeye.
- ROCK-ROSE FAMILY. *Helianthemum Carolinianum*, Rock-rose. Apr. 1.

- VIOLET FAMILY. *Viola palmata*, Blue Violet. Mar. 25, Apr. 18.
Viola lanceolata, Lance-leaved Violet. Apr. 26.
Viola primulafolia. White Violet. Mar. 25.
- EVENING PRIMROSE FAMILY. *Oenothera humifusa*. Apr. 5.
Oenothera laciniata. Apr. 5, May 23.
Kneiffia fructicosa, Common Sundrops. Apr. 18.
Hartmannia speciosa. Apr. 5.
- DOGWOOD FAMILY. *Cornus Florida*, Flowering Dogwood. Mar. 19, 25.
- CARROT FAMILY. *Ptilimnium capillaceum*, Mock Bishop-weed. Apr. 5, 16.
- WINTERGREEN FAMILY. *Chimiphila maculata*, Spotted Wintergreen. Apr. 12.
- HEATH FAMILY. *Azalea nudiflora*, Wild Honey Suckle. Mar. 25.
Pieris nitida, Fetterbush. Apr. 1.
Pieris Mariana, Fetterbush. Apr. 23, May 12.
- HUCKLEBERRY FAMILY. *Polycodium stamineum*, Huckleberry. Mar. 25.
Vaccinium corymbosum, Blueberry.
- SWEET-LEAF FAMILY. *Symplocos tinctoria*, Wild Laurel. Apr. 20.
- STORAX FAMILY. *Mohrodendron dipterum*, Silver-bell Tree. Apr. 8.
- OLIVE FAMILY. *Osmanthus Americana*, American Olive. Apr. 5.
- LOGANIA FAMILY. *Gelsemium sempervirens*, Yellow Jessamine. Mar. 25.
- MILKWEED FAMILY. *Asclepias tuberosa*, Butter-fly weed. May 23.
Asclepias variegata, White Milkweed. May 12.
- POTATO FAMILY. *Physalis Virginiana*, Virginia Ground-cherry. Apr. 12.
Solanum Carolinense, Horse-nettle. May 10.
- HELIOTROPE FAMILY. *Heliotropium Indicum*. May 1.

- MINT FAMILY. *Scutellaria integrifolia*, Skullcap. May 23.
Lamium amplexicaule, Dead Nettle. Mar. 10.
Salvia lyrata, Lyre-leaved Sage. Apr. 1, May 23.
- FIGWORT FAMILY. *Linaria Canadensis*, Figwort.
Gratiola spharocarpa, Hedge-hyssop. Mar. 25.
- BLADDERWORT FAMILY. *Pinguicula lutea*, Yellow Pinguicula.
 Apr. 1.
Utricularia radiata. Apr. 14.
Utricularia inflata, Swollen Bladderwort. Apr. 14.
- MADDER FAMILY. *Houstonia scrypillifolia*, Bluets. Mar. 10.
Houstonia rotundifolia, Round-leaved Bluets. Feb. 28,
 Mar. 25.
Mitchella repens, Partridge-berry. Apr. 12, May 5.
- HONEYSUCKLE FAMILY. *Lonicera sempervirens*, Woodbine.
 Mar. 26, Apr. 18.
- BIRTHWORT FAMILY. *Hexastylis arifolium*, Wild Ginger. Apr. 5.
- BELLWORT FAMILY. *Specularia perfoliata*, Venus' Looking-glass. Apr. 5, May 23.
- THISTLE FAMILY. *Chrysopsis Mariana*, Golden-aster. Apr. 12.
Erigeron pulchellus, Robin's Plantain. Mar. 25.
Erigeron Philadelphicus, Common Fleabane, Apr. 5, May 23.
Senecio lobatus, Groundsel. Apr. 14.
Thysanthera semiflosculare. Feb. 22.
- CHICORY FAMILY. *Silivias Caroliniana*. Apr. 5, May 2.
Sonchus oleraceus, Hare's Lettuce. Mar. 31, May 23.
Adopogon Carolinianus, Carolina Dwarf Dandelion. Apr. 1.

LOCAL FAUNA

MOLLUSCA

During the spring a revision of the conchological collections has been in progress under the direction of the honorary curator of the department, Mr. William G. Mazyek, with the assistance of Miss M. Elizabeth Klinek. These collections are very extensive and, when properly worked up, will afford material for several interesting exhibits, but the Museum desires first to exhibit the local shells for educational work, as well as for use in a survey of the molluscs of the coast region of the State. For this purpose Mr. Mazyek has set aside the local specimens in the Museum collections and has offered to add to these from his extensive private cabinet, so that the nucleus of a local exhibit may be prepared at once.

The assistance of the public, and especially of school children, is requested for the extension of this collection. Collectors should compare their specimens with the local exhibit and submit to Mr. Mazyek for identification all additional species. The largest and most perfect shells are desired but inferior specimens of species not represented in the local exhibit will serve until better can be procured. A record of the locality where each shell is found should always be preserved, and shells containing living molluscs are preferable to beach-worn shells. Many molluscs which live below low tide mark, however, can only be taken alive by the use of the dredge, and in these cases, beach shells, if in good condition, will be received until collection with the dredge can be undertaken.

The Museum library contains many interesting books on shells and other animals of the sea-shore and either Mr. Mazyek or Miss Klinek will take pleasure in assisting any who wish to make collections.

The Museum hopes soon to publish an annotated list of the molluscs of this region, in which classic work has been done in earlier years.

A METEOROLOGICAL EXHIBIT

The director is pleased to announce that the chief of the United States Weather Bureau has authorized the installation in the Museum, after the first of July, of a complete set of meteorological instruments for automatically registering the wind direction and velocity, sunshine and rainfall, temperature and barometric pressure. This equipment will be identical with that used in regular stations of the Weather Bureau throughout the country and will be installed in such a manner as to afford a practical demonstration of the daily work of these stations and of the principles of weather forecasting. The instruments will be accompanied by descriptive labels and will be supplemented by charts in swinging frames, etc., in addition to the daily weather maps now posted in the Museum. In connection with this exhibit the library will be supplied with books and pamphlets on meteorology.

The purpose of the Museum in securing this exhibit, and the only condition upon which the co-operation of the Weather Bureau was secured, is the promotion of a better popular appreciation of the science of meteorology and its relation to important industries. To this end the Museum proposes to conduct an intensive experiment with the public schools of Charleston, demonstrating the principles which make possible a high degree of accuracy in the forecasting of great storms and floods and the necessary uncertainty pertaining to those minor, local weather changes by which the science is often popularly judged.

It is hoped that friends of the Museum will enable it to offer small prizes, from time to time, for the best essays by children of certain ages on meteorological subjects which involve the use of the Museum library in connection with this exhibit.

There is no more effective means of disseminating information than by putting it in the minds of children, who will quickly

secure the interest of their parents, and who will themselves form the community of tomorrow.

The Charleston Museum is probably the first museum in the country to undertake this particular line of work, but a related experiment has been carried out with most gratifying success by the Children's Museum in Brooklyn, where high school boys have equipped a wireless telegraphy station and have acquired such knowledge and experience that a number of them are now employed in this work at good salaries. To any boy who is interested in the work of the Weather Bureau as a profession the Charleston Museum will now be able to offer opportunity for practical experience.

A more detailed description of this exhibit and of the plans for its use will be published in the fall.

NOTES FROM THE MUSEUM

With this issue the BULLETIN suspends publication until October. The Museum library will be open as usual in July and September, but will be closed in August, when the librarian will take her vacation.

The director represented the Museum at the fourth annual meeting of the American Association of Museums, held in Philadelphia, May 11-13. The Charleston Museum is one of the charter sustaining members of this association, and has been its home office since the election of Professor Rea as Secretary in 1907. The meetings of the association promote a valuable exchange of ideas among museum workers and stimulate the development of museums throughout the country. In addition to an annual volume of *Proceedings* the association is now compiling a directory of museums of art, history and science in North and South America.

BULLETIN
OF
THE CHARLESTON MUSEUM

EDITED BY
PAUL M. REA

EXHIBITS AT THE MUSEUM—METEOROLOGY
THE NATURAL HISTORY SOCIETY
THE BIOLOGICAL SURVEY
LOCAL FAUNA—THE CITRUS WHITE FLY
NOTES FROM THE MUSEUM
MUSEUM CALENDAR

The Charleston Museum

UNDER THE AUSPICES OF THE COLLEGE OF CHARLESTON

Director

PAUL M. REA

Librarian

LAURA M. BRAGG

Honorary Curators

WM. G. MAZYCK.....	<i>Conchology</i>
DANIEL S. MARTIN.....	<i>Geology</i>
ARTHUR T. WAYNE.....	<i>Ornithology</i>
NATHANIEL W. STEPHENSON.....	<i>Art</i>

THE CHARLESTON MUSEUM was in existence as early as 1777 under the auspices of the Charleston Library Society, was transferred to the Literary and Philosophical Society of South Carolina in 1815, to the Medical School in 1828, and to the College of Charleston in 1850. In 1907 a building was provided by the City and the name changed to The Charleston Museum.

The Museum is dependent upon dues from members and private subscriptions for all permanent improvements, for increase of the collections, and for maintenance of its educational and scientific work.

The membership fees are:—

ANNUAL MEMBERS.....	\$ 10	PATRONS.....	\$ 500
SUSTAINING MEMBERS.....	25	BENEFACTORS.....	1000

The privileges of members include admission on pay days, tickets to members' lecture courses, and copies of Museum publications.

THE BULLETIN OF THE CHARLESTON MUSEUM is published monthly, from October to May, by the Museum and is entered at the Post Office at Charleston, S. C., as second class matter.

BULLETIN

OF

THE CHARLESTON MUSEUM

VOL. 5 CHARLESTON, S. C., OCTOBER, 1909 No. 6

EXHIBITS AT THE MUSEUM

METEOROLOGY

Last spring we announced that the chief of the United States Weather Bureau had authorized the installation in the Museum of a complete set of the meteorological instruments used in Weather Bureau stations throughout the country. This exhibit is now open for inspection and will be made the basis of public lectures and educational work with the schools for the purpose of promoting a better understanding of the principles of meteorology and their relation to weather forecasts.

The equipment includes a platform on the roof, on which a wind vane for determining the direction of the wind, an anemometer for measuring its velocity, a sunshine recorder, and rain gauges are erected. These instruments are connected electrically with a recording apparatus, known as a meteorograph, in the entrance hall. This instrument runs by clockwork and makes a continuous record of the direction and velocity of the wind, the duration of sunshine, and the amount and time of rainfall. Beside the meteorograph are shown duplicates of the instruments on the roof, as well as a whirling apparatus for demonstrating the use of wet and dry bulb thermometers, and a barograph, which makes a continuous record of barometric pressure. Standard mercurial barometers are also shown in the hall.

while maximum and minimum, wet and dry bulb thermometers, and a thermograph for making a continuous record of temperature are installed in an out-door shelter at the right of the entrance to the Museum.

The instrumental exhibit is supplemented by the Charleston and Washington daily weather maps, and by a series of charts in swinging frames, illustrating the progress of storms across the country and the character of the climate throughout the United States.

Public lectures will be given by Professor Rea on November 15th and 22nd, in which the instruments enumerated above will be explained with the aid of lantern slides, and the principles of weather forecasting discussed. The Museum will also make special arrangements to demonstrate the instruments and explain their use to classes from the public and private schools.

The Museum library is preparing special lists of books and papers on meteorology for use in connection with this exhibit.

THE NATURAL HISTORY SOCIETY

The fall work of the Charleston Natural History Society began with a meeting on Thursday afternoon, October 21st, at which a revision of the constitution, authorized last spring, was presented by the executive committee and laid on the table for consideration at the November meeting. The revised constitution provides for the organization of two sections, A and B respectively, the former to include honorary members and all active members over fifteen years of age, the latter to include all active members under fifteen years of age. The Society decided to devote special attention during the fall and winter to the study of trees, and authorized the appointment of a com-

mittee to organize a survey of the trees of the city streets and gardens. The work on birds and flowers will be carried on as in the past but the field trips should take on added interest from the new work on trees.

The large attendance at the meeting and the enthusiasm with which the plans for study of trees were received promise an active and successful season for the Society.

In November Section A will meet on the 4th and Section B on the 11th. Business requiring joint action will be presented to both sections.

THE BIOLOGICAL SURVEY

The biological survey of the Charleston Museum has hitherto been concerned almost exclusively with bird records, a summary of which was published in the BULLETIN for February and March, 1909. New cards have now been prepared for the extension of the survey to other groups. A special record form has been designed for plants and a general record form for other groups, the intention being to make up additional forms for special groups whenever necessary.

In addition to the general records of occurrence, a life history note book has been opened in which a daily diary is kept of the life of the various forms which are kept alive in the Museum. Thus, for snakes, the feeding, change of skin, birth of young, etc., are recorded.

A number of spiders and insects have been kept in breeding cages since the first of September by Miss Bragg. These have proved of special interest to children and have furnished life history notes of much interest.

LOCAL FAUNA

THE CITRUS WHITE FLY

The small white fly which invaded Charleston this summer in such dense swarms proves to be the Citrus White Fly (*Aleyrodes citri*). This insect was first noticed in Florida, where it feeds extensively upon the orange, grape-fruit and lemon trees. From Florida it has, unfortunately, been carried to California. Owners of fruit groves infested by it incur an annual loss of not less, and often far more, than fifty per cent.

The White Fly begins its life in an egg laid on the under side of a leaf of one of its food plants. In about three weeks the larva hatches. At first an active little insect which feeds upon the juices of the leaf, it soon develops into a tiny scale-like object, secreting in this and in the following pupal stage a sticky fluid, called honey-dew, in which a black mold forms. This mold, on badly infested trees, spreads a dark covering over both leaves and fruit. Although not killed, the tree is so sapped of its vitality that its producing power is reduced practically one-half. Moreover, what fruit does form is of an inferior grade.

This fly has three broods, the larva of the last brood hatching late in October. Not until spring does the pupa form, while the adults—the flies—first appear in March and April. A second brood in June and July and a third in August and September complete the life cycle.

The United States Department of Agriculture has experimented extensively as to the best means of minimizing the ravages of this pest. It advocates fumigation with hydrocyanic-acid gas, a process known as "gassing", which is successfully used in California. In this process a tent is drawn over the tree which is to be fumigated and the gas is generated under its shelter.

While not sufficiently destructive outside of the large citrus growing districts to warrant the expense of fumigation, the White Fly may, nevertheless, work havoc elsewhere, since, beside the citrus trees, it feeds upon the Texas umbrella tree, the Pride of India, the mock orange, the cape jessamine, the privets, the lilac, the pear, the Japan persimmon, wild persimmon, and even other trees. Since several of these trees, as well as the orange, are common in Charleston, it is desirable that the work of the fly be watched and record made of all trees upon which larvae are found. The Museum will be glad to receive reports of this pest, especially when accompanied by specimens.

Literature relating to the White Fly may be consulted at the Museum library.

NOTES FROM THE MUSEUM

Until the installation of exhibits is further advanced, the Museum will be open to visitors from 10 A. M. till 6 P. M. daily except Sunday. Children unaccompanied by an adult will, however, be admitted only on Saturday.

Miss Laura M. Bragg became librarian of the Museum on September first, succeeding Miss Elizabeth Van Hovenberg, who resigned in July because of ill health. Miss Bragg is a graduate of Simmons College, and has had experience in combined library and museum work at Orr's Island, Me. She will have charge of a large part of the educational activity of the Museum in addition to the care of the library. The appearance of the book stacks has been greatly improved by the binding of many periodicals in strong pamphlet binders.

Among the accessions to the Museum collections during the summer is a curious fish (*Antennarius ocellatus*)¹ presented by Dr. G. W. Aimar, who received it from a fisherman early in

¹Cons. Mus., Spec. No. 2532.

July. The precise locality is not known, but since the fish was received in fresh condition it must have been taken on some of the fishing banks off Charleston. The species is common in West Indian waters and occurs as far north as Florida, but the Museum has no previous record of it off this coast. Other recent accessions include two barrels of phosphate fossils donated by Mr. W. L. Miller; a number of Indian relics and phosphate fossils collected by Mr. A. Baron Holmes and presented by Mr. and Mrs. James H. Holmes; a box of fossil plants received from the New York Botanical Garden in exchange; a Golden Pheasant presented in the flesh by Mr. W. K. McDowell, and prepared as a skin by Messrs. Burnham and Rhett Chamberlain; and a handsome specimen of the Lacebark tree from Panama, presented by Mr. J. R. Von der Lieth. The last derives its name from the beautifully reticulated structure of the inner bark. The fibres composing this network are remarkably strong and may be spread apart like a delicate lace or braided into cordage. The specimen here described has the form of a whip and illustrates admirably the properties of the tree.

Recent additions to the collection of living snakes include a number of Queen Snakes (*Tropidonotus leberis*), presented by Mr. Ellison Williams; a Keeled-scaled Green Snake (*Cyclophus aëstivus*), taken by Mr. F. W. Wamsley at the Navy Yard; a King Snake (*Ophibolus getulus*), brought to the city in a load of scrap iron from Pon Pon, and presented to the Museum by Mr. C. V. Boykin; a young King Snake and a Hog-nosed Snake taken at the Navy Yard by Master William Humme; Brown Snakes presented by Grace Wamsley, Lieve Frampton and Annie Creighton; and Corn Snakes (*Coluber guttatus*), presented by Messrs. Francis Wayne, T. M. Donahue, and F. M. Weston, Jr. The Queen, Keeled-scaled Green, and Hog-nosed Snakes have not been previously recorded in the biological survey of

the Museum. Another species noted for the first time is the Southern Pigmy Rattlesnake (*Sistrurus miliaris*), a specimen of which was found recently killed, at the Navy Yard, by Mr F. M. Weston, Jr.

The main hall of the Museum will be occupied by the American Tuberculosis Exhibition from November 10th to 20th. This exhibition is conducted by the National Association for the Study and Prevention of Tuberculosis, in co-operation with the local board of health and other organizations, and is intended to educate the general public to the importance of the problem presented by this disease and to the measures necessary for its eradication. The exhibition has been shown in a large number of cities throughout the country.

Mr. Arthur T. Wayne's book on the birds of South Carolina has been prepared for the press during the summer and is expected to be published early this fall. It will be the first of a new series of publications of a research character to be known as Contributions from the Charleston Museum. Such a series will greatly extend the exchanges of the Museum Library. It is also a gratifying evidence of the progress of the Museum in technical work during the period of disorganization incident to its removal to the new building. Other papers for this series are also in course of preparation.

As we go to press Mr. William G. Hinson has presented to the Museum library a copy of Michaux's North American Sylva, in three volumes. This work will be of special value, not only for its many beautiful colored plates, but because Michaux did much of his work about Charleston and frequently refers to the trees of this vicinity in his book. These volumes are a very gratifying addition to our collection of scientific Caroliniana, and will be of immediate service in the biological survey of the trees of the coast region.

MUSEUM CALENDAR FOR NOVEMBER

November 4th, Thursday. Regular monthly meeting of the Natural History Society, Section A, at 5 p. m. Election of officers, vote on the revised constitution, and organization for winter work on trees and birds, followed by an informal talk by PROFESSOR REA on "Autumn Foliage." *A general invitation to be present is extended to all interested.*

November 10th to 20th. American Tuberculosis Exhibition. Informal stereopticon demonstrations hourly. Special lectures at 5 and 8:30 p. m. daily. *Open free to the public from 10 A. M. to 10 P. M.*

November 11th, Thursday. Regular monthly meeting of the Natural History Society, Section B, at 4:30 p. m. Election of officers, vote on the revised constitution, and organization for winter work on trees and birds, followed by informal talk by PROFESSOR REA on "Autumn Foliage." *A general invitation to be present is extended to all interested.*

November 12th, Friday. Field trip of the Natural History Society, Section B, at 3:30 p. m. Details will be announced at the November meeting of Section B. *Open to members only.*

November 15th, Monday. Lecture by PROFESSOR REA at 8:15 p. m. Subject "The New Meteorological Exhibit." *Open free to the public.*

November 22, Monday. Lecture by PROFESSOR REA at 8:15 p. m. Subject: "Weather Forecasting." *Open free to the public.*

November 25, Thursday. Field trip of the Natural History Society, Section A. Details may be obtained when registering. *Open only to members who have registered at the Museum library previous to Wednesday noon, November 24th.*

BULLETIN
OF
THE CHARLESTON MUSEUM

EDITED BY
PAUL M. REA

LOCAL FAUNA—BIRD LIFE OF A CITY GARDEN
SAILFISH, WHISTLING SWAN, CORAL SNAKE
THE NATURAL HISTORY SOCIETY

The Charleston Museum

UNDER THE AUSPICES OF THE COLLEGE OF CHARLESTON

Director

PAUL M. REA

Librarian

LAURA M. BRAGG

Honorary Curators

WM. G. MAZYCK.....*Conchology*
DANIEL S. MARTIN.....*Geology*
ARTHUR T. WAYNE.....*Ornithology*
NATHANIEL W. STEPHENSON.....*Art*

THE CHARLESTON MUSEUM was in existence as early as 1777 under the auspices of the Charleston Library Society, was transferred to the Literary and Philosophical Society of South Carolina in 1815, to the Medical School in 1828, and to the College of Charleston in 1850. In 1907 a building was provided by the City and the name changed to The Charleston Museum.

The Museum is dependent upon dues from members and private subscriptions for all permanent improvements, for increase of the collections, and for maintenance of its educational and scientific work.

The membership fees are:—

ANNUAL MEMBERS.....\$ 10	PATRONS.....\$ 500
SUSTAINING MEMBERS.... 25	BENEFACTORS..... 1000

The privileges of members include admission on pay days, tickets to members' lecture courses, and copies of Museum publications.

THE BULLETIN OF THE CHARLESTON MUSEUM is published monthly, from October to May, by the Museum and is entered at the Post Office at Charleston, S. C., as second class matter.

177-1
B. 1. 101
GARDEN

BULLETIN

OF

THE CHARLESTON MUSEUM

VOL. 5 CHARLESTON, S. C., NOVEMBER, 1909 No. 7

LOCAL FAUNA

FURTHER NOTES ON THE BIRD LIFE OF A CITY GARDEN

BY HERBERT RAVENEL SASS

An annotated list of ninety species of birds seen in or flying over my garden in the southwestern part of Charleston was published in the BULLETIN¹ three years ago. An additional list of sixteen species was printed the following year.² The further notes given below include a number of species omitted from the earlier lists because they could not be certainly identified, but which have undoubtedly been seen from the garden, and should therefore be included in its fauna; species which have been observed for the first time since the last supplement was published; and a number of species which do not visit the garden, but which have been seen from the garden on the neighboring river and its mud-flats.

107. **Loon.**—On March 30, 1908, I saw from my window a loon flying northward over the city. The species is not uncommon on the rivers and harbor from early November until the end of March.

108. **Laughing Gull.**—Common in winter on the Ashley River, sometimes flying over the garden.

109. **Bonaparte's Gull.**—Sometimes common on the river in winter and occasionally seen flying over the garden.

¹ Vol. 2, No. 7, Nov., 1906. ² Vol. 3, No. 6, Oct., 1907.

110. **Caspian Tern.**— } Both these species undoubtedly fre-
111. **Royal Tern.**— { quent the rivers and harbor and some-
times pass over the city. Neither is common, however.

112. **Foster's Tern.**—It is practically impossible to distinguish this species from the Common Tern in life, but it unquestionably occurs on the rivers and harbor, and sometimes passes over the city.

113. **Black Skimmer; "Shearwater".**—Fairly common in August and September on the Ashley River. They do much of their fishing at night, and I have often heard them in the darkness either passing over the garden or fishing close in shore. I have seen from my window a flock which must have contained five hundred birds.

114. **Double-crested Cormorant.**— } Cormorants were very

115. **Florida Cormorant.**— } common on the Ashley River during the winter and early spring of 1908, sometimes passing over the garden. Both these very similar species were undoubtedly represented.

116. **Red-breasted Merganser.**—From my window I have occasionally seen this species on the Ashley River in winter.

117. **Hooded Merganser.**—Not uncommon on the Ashley River in winter.

118. **Mallard?**—I have seen flocks of ducks of one of the larger species pass over in autumn. Some of these were almost certainly mallards and probably most of them belonged to this species.

119. **American Scaup Duck?**— } "Black-headed" ducks are

120. **Lesser Scaup Duck.**— } often seen on the Ashley River in winter. Probably most of them are Lesser Scaups, but it is impossible to distinguish between the two species at a distance.

121. **Bufflehead; Butterball.**—From my window I have sometimes seen this species on the Ashley River in winter.

122. **Least Bittern.**—Early in April, 1908, three of these birds

were repeatedly seen in the Rutledge and Barker lots. One of them was seen on the roof of a building in my garden.

123. **Snowy Heron.**—At least some of the small white herons which frequent the Ashley River mud-flats during the warmer part of the year belong to this rare species. By means of a telescope, I have distinguished clearly from my window the yellow feet by which this species may be separated from the immature Little Blue Heron in the white phase.

124. **Yellow-crowned Night Heron.**—On September 3, 1909, an immature individual of this species was observed in a tree in an adjacent lot. Later another was seen in company with the first. One of them evidently left during the night, but the other remained until October 12. At dusk it would fly down to the mud-flats bordering the river, where it fed on fiddler crabs. Several times on rainy days it came down into the backyard and garden and caught earthworms in the puddles of rain-water. This is the only city record of this unusual and interesting species.

125. **Semipalmated Sandpiper.**—Common on the mud-flats along the river in spring, summer, and early autumn, sometimes passing over the garden.

126. **Spotted Sandpiper.**—Observed occasionally on the mud-flats from my window.

127. **Hudsonian Curlew.**—On August 4, 1909, a flock of about twenty-five of these birds passed over the garden. On autumn nights I have several times heard curlews passing over.

128. **Semipalmated Plover.**—In May, August, and September, I have often seen this species from my window feeding on the mud-flats, generally in company with the Semipalmated Sandpiper. I have seen two of them in the Barker lot within thirty feet of a house.

129. **Swallow-Tailed Kite.**—Years ago, date unknown, two Kites passed over the city. It may be straining a point to include this species in the garden list, since I was on the river when I saw the two specimens referred to; but they could easily have been seen from the garden. One of them was taken.

130. **Florida Red-shouldered Hawk.**—I have at least one garden record for this species, and other records of doubtful authenticity.

131. **Cowbird?**—I have two doubtful garden records for this species—March 14, 1907, and March 10, 1908.

132. **Pine Siskin.**—On April 18, 19, and 20, 1909, a flock of eight or ten Pine Siskins visited the garden. The birds had probably been present for some days previous. They were very tame, and were seen both in the tall elms and in low privet bushes. This record is remarkable because of the rarity of this species, because it had never before been observed in the city, and because these dates are later than any others on which the bird has been reported in the coast region.

133. **Savannah Sparrow.**—An occasional winter visitant to a patch of marsh overlooked from my window.

134. **Henslow's Sparrow?**—On November 1, 1908, I saw a sparrow resembling this species in a lot overlooked from my window. It had the light rufous brown coloring characteristic of this species, but I was unable to identify it satisfactorily.

135. **Chipping Sparrow.**—Two individuals were seen and heard singing in the garden and in a neighboring lot, on March 18, 1908.

136. **Junco.**—Observed in the garden on December 12, 1907, and on February 29 and March 1, 1908.

137. **Palm Warbler.**—I have observed this species in the garden and adjacent lots from October 1 until the middle of February. It is probably a regular but rather rare winter visitant.

138. **Yellow Palm Warbler.**—I observed an adult of this species in a lot overlooked from my window, on November 4, 1907.

139. **Gray-Cheeked Thrush?**—On May 3, 1908, I saw in a shady corner of the garden a greenish olive thrush which I identified doubtfully as this species. The bird was rather shy and I could not identify it with absolute certainty.

LOCAL FAUNA

SAILFISH

A specimen of the Sailfish (*Regalecus glesne* Ascanius) was taken near the Grouper Bank, about seventy miles off Charleston, by the fishing boat Peerless, on June 23, 1909. The specimen was sent to the Museum but, in the absence of the director, it was not successfully preserved on account of its large size. It was finally buried in the Museum grounds, for the preservation of the skeleton, but misfortune again followed it, for the land was ploughed by direction of the Park Board and the bones scattered. Such parts as were recovered are now in the Museum collection.¹

The following account of this specimen was printed in the News and Courier (Charleston), June 26, 1909.

The monster is about six feet long, inclusive of a snout which is itself probably a little more than a foot in length. It is scaleless and of a dark bluish color, somewhat transparent. On the back of the fish is an enormous fin about one foot in height in the highest place, and running about three feet over the middle of the back. The tail fin is forked, each prong being almost a foot in length. One of the most characteristic markings of the fish are the two very large fin-like processes which, in the dead condition, are drawn in under the belly. The snout appears to be a continuation of the head and is provided on each side with sword-like processes, probably the defensive weapon of the fish.

The National Museum has a skeleton and a plaster cast of a specimen, with a drawing made while it was still fresh.

Dr. G. Brown Goode² says of the occurrence of the Sailfish:

The occurrence of the Sail-fish is...very unusual. Marcgrave saw it in Brazil as early as 1648. Sagra and Poey mention that it has been seen about Cuba, and Schomburgh includes it in his Barbados list. The specimen in the United States National Museum was taken off Newport, R. I., in 1872... No others were observed in our waters until March, 1878, when, according to Mr. Neyle Habersham, of Savannah, Ga., two were taken by a vessel between Savannah and Indian River, Florida, and were brought to Savannah... In 1873, according to Mr. E. G. Blackford, a specimen in a very mutilated condition was brought from Key West to New York City.

Jordan and Evermann³ refer to a specimen obtained by Dr.

¹ Spec. No. 2533.

² Proc. U. S. Nat. Mus., 1881, p. 427.

³ Bull. U. S. Nat. Mus., No. 47, Part 1, p. 891.

Jordan at Key West. One which came ashore at Ancelote Key, on the west coast of Florida, is recorded in Forest and Stream for April 1, 1905.

The present specimen is the first record for South Carolina and is of general interest because of the rarity of the species.

WHISTLING SWAN

A specimen of the Whistling Swan (*Olor columbianus*) was taken at Mr. Ball's plantation "Rice Hope" on Cooper River, November 21, 1909, and presented to the Museum by Mr. D. S. Lesesne. The specimen is being prepared as a skin for the Museum collection.

The Whistling Swan is seldom taken in South Carolina, and the Museum has no previous record of it in the biological survey of the past three years.

CORAL SNAKE

Two specimens of the Coral Snake (*Elaps fulvius*) have been added to the collection of living snakes during the month. The first was taken at Summerville on November 8, and presented to the Museum by Mr. Edward Veronee. The second was taken on the following day, within four hundred feet of the place where the first was captured.

This brilliantly colored snake is extremely poisonous, and may be distinguished from the closely similar Scarlet King Snake (*Ophibolus doliatus coccineus*) by the fact that the latter has broad yellow rings bordered by narrow black rings, while in the true Coral Snake the black bands are broad and bordered with narrow yellow bands.

The Museum has but one previous record for the Coral Snake; a specimen killed at Hagan plantation, Cooper River, November 13, 1908, by Father Metivier, and presented by him to the Museum.

P. M. REA.

THE NATURAL HISTORY SOCIETY

At the November meetings of the Natural History Society, the revised constitution was formally adopted, and by-laws were enacted dividing the Society into two sections, A and B respectively. The former includes all honorary members, and active members sixteen years of age or over; the latter, all active members fifteen years of age or under.

The following general officers have been elected. President, Miss Laura M. Bragg; vice-president, Miss Annie Sloan; treasurer, Miss Laura L. Weeks. A general secretary will be elected at the December meeting. The following additional officers for Section B were elected: vice-president, Master Rhett Chamberlain; secretary, Miss Isabelle O'Neill.

The Society has undertaken, as a part of its tree study, a survey of the trees of the City, beginning with those on the streets and public grounds, and extending to private gardens as opportunities offer. A general committee has been appointed to organize this work, and it is desired that as much progress as possible be made while leaves are still to be found on the trees.

The plans for tree work include both the identification of species and varieties, and the study of the structure and life of trees in general. The November meetings were accordingly taken as the occasion for a talk by Prof. Rea on "Autumn Foliage," in which the function of chlorophyll and the life history of the leaf were discussed, and for an introduction to the common species of oaks, by Miss Bragg. At the meeting of Section B, Mr. F. M. Weston, Jr., demonstrated a number of species of birds likely to be seen on the field trip.

Both sections of the Society have taken field trips during the month. Section B went to Hampton Park on November 12, and studied birds, butterflies, and trees. Section A visited the site of Old Charles Town on Thanksgiving day, spending the morning in the study of trees, especially the oaks and pines, and uniting at noon with the Children of the American Revolution in the dedication of a marker which they have placed on this site.

December meetings will be held as follows: Section A on Thursday, December 2, at 4:30 P. M.; Section B on Thursday, December 9, at 4:30 P. M. Attention is called to a recent decision that *postal card notices of meetings will no longer be sent to members*, but announcements will be inserted in the daily papers as heretofore.

The program for the December meetings will include a review of the field trips, further remarks on the species of oaks and pines, and a discussion of the formation of their fruit—the acorns and cones. Mr. Francis M. Weston, Jr. will give an account of the birds of the Rail family which occur in this region. A new feature of the meetings will be a roll-call, at which each member will be requested to mention some species of exotic tree or shrub cultivated in the city, and to state briefly its history or the degree to which it flourishes here.

NOTES FROM THE MUSEUM

For eleven days in November the main hall was occupied by the American Tuberculosis Exhibition, which formed the nucleus of a campaign for the education of the public regarding the nature of tuberculosis and the community action necessary for its eradication. The exhibition was visited by 10,846 people; an average of nearly a thousand a day.

Through the kindness of Miss Henrietta A. Kelly, the Museum has received a dozen white mulberry trees (*Morus alba* Linn.), which have been planted on the Museum grounds, and will afford an opportunity in the spring for an experiment in silkworm culture.

NOTE: The Museum files of numbers 3, 4, and 5 of the first volume of the BULLETIN are exhausted, and if any readers have copies of these issues which they are willing to return, the Museum will receive them gratefully.

BULLETIN
OF
THE CHARLESTON MUSEUM

EDITED BY
PAUL M. REA

LOCAL FAUNA—SPIDERS
SUMMER BIRD RECORDS
THE NATURAL HISTORY SOCIETY
LIBRARY ACCESSIONS
INDEX

The Charleston Museum

UNDER THE AUSPICES OF THE COLLEGE OF CHARLESTON

Director

PAUL M. REA

Librarian

LAURA M. BRAGG

Honorary Curators

WM. G. MAZYCK.....	<i>Conchology</i>
DANIEL S. MARTIN.....	<i>Geology</i>
ARTHUR T. WAYNE.....	<i>Ornithology</i>
NATHANIEL W. STEPHENSON.....	<i>Art</i>

THE CHARLESTON MUSEUM was in existence as early as 1777 under the auspices of the Charleston Library Society, was transferred to the Literary and Philosophical Society of South Carolina in 1815, to the Medical School in 1828, and to the College of Charleston in 1850. In 1907 a building was provided by the City and the name changed to The Charleston Museum.

The Museum is dependent upon dues from members and private subscriptions for all permanent improvements, for increase of the collections, and for maintenance of its educational and scientific work.

The membership fees are:—

ANNUAL MEMBERS.....	\$ 10	PATRONS.....	\$ 500
SUSTAINING MEMBERS.....	25	BENEFACTORS.....	1000

The privileges of members include admission on pay days, tickets to members' lecture courses, and copies of Museum publications.

THE BULLETIN OF THE CHARLESTON MUSEUM is published monthly, from October to May, by the Museum and is entered at the Post Office at Charleston, S. C., as second class matter.

BULLETIN

NEW YORK
BOTANICAL
GARDEN

OF

THE CHARLESTON MUSEUM

VOL. 5 CHARLESTON, S. C., DECEMBER, 1909 No. 8

LOCAL FAUNA

SPIDERS

A female spider, *Oxyopes viridans*, taken at the Navy Yard by Mr. F. M. Weston, Jr., on September 28, has been kept alive at the Museum, and its process of egg-laying studied by Miss Laura M. Bragg, upon whose notes the following account is based.

On October 7 a cocoon similar to that described by Hentz¹ was formed. This author well describes the solicitude with which the female watches over the cocoon, but an accident unfortunately prevented him from studying the development of the young after hatching. Miss Bragg's notes are therefore of special interest.

Late in October a rupture of the cocoon exposed what appeared to be two yellow eggs, but which proved upon examination with a hand lens to be young spiders. After a day at the crack in the cocoon they disappeared and only flecks of white material could be seen until November 13, when approximately one hundred and fifty young spiders began to emerge from the cocoon.

These were about one tenth of an inch in length, with deep orange abdomen and green cephalothorax, with spots and three longitudinal bands of brown. The legs were marked with alternate light and dark rings, and bore black spines.

¹ Spiders of the United States. Bost. Soc. Nat. Hist., *Occasional Papers*, II, 1875.

At this stage, the cocoon was cut open, and many of the spiders still within were found to be moulting. After the moult they were lighter in color than those which had left the cocoon earlier. Moulded skins and the remains of eggs were plentiful.

Before the young left the cocoon the mother would neither eat nor drink unless food and water were placed where they could be reached without leaving the cocoon, while afterwards she chose another part of the breeding cage for herself and seldom went near the young, who continued to cluster about the cocoon, and are not carried by the mother, as Hentz suggested might be the case. Early in December both mother and young were preserved in formalin for the Museum collection.¹

Another interesting spider, which was collected at McClellanville, S. C., and presented to the Museum by Miss Maria Gibbes, is *Epeira cancer*. This is a most satisfactory name, for *cancer* means "crab," and no name could better describe this curious little spider. With the specimen came an egg-case of brilliant green silk, formed by the species.

Since this specimen was received the species has been observed alive in the woods near Charleston, where its symmetrically finished, three-pointed web was stretched perpendicularly across a broad path.

The frequency with which spiders are brought to the Museum seems to indicate an interest in the group, and the Museum will be glad to receive and identify specimens.

P. M. REA

L. M. BRAGG

SAILFISH: A Correction

In the account of the Sailfish in the November issue of the BULLETIN² the scientific name was erroneously given as *Regalecus glesne*. The correct name of this species is *Istiophorus nigricans*.

P. M. REA

¹ Spec. No. 12,004. ² Vol. V, No. 7, p. 61.

SUMMER BIRD RECORDS

Among the bird records made during the summer months, a few may be mentioned as being of general interest. There are several resident species in this region which, although abundant during the winter months, have never been recorded by the Museum in summer. The past summer's work, however has resulted in very fair series of records for three of these species—Belted Kingfisher, Meadowlark, and Field Sparrow. It is encouraging to note that no one of these series was made from one locality only, showing that the observers had found more than one pair of each species.

The Killdeer Plover, a bird which heretofore has been reported first in early November, was found this year on Aug. 17, when a flock of five was seen in St. Andrews Parish. This, at first, appeared an unusually early record, but Mr. A. T. Wayne says that the Killdeer is sometimes found here still earlier in the summer.

It is interesting to note that a pair of Blue Jays again nested in the trees on the College of Charleston campus. This species has been but rarely seen in town; yet for three successive summers it has bred in the heart of the city.

Master Burnham Chamberlain reports that he and his brother watched a pair of Red-headed Woodpeckers which had a nest on the Porter Military Academy campus. The nest was first found on June 15, when the young birds were almost grown; they left the nest on June 20. By June 24, the parent birds had started another nest.

The Museum is also indebted to Messrs. Burnham and Rhett Chamberlain for interesting records on the breeding of the Fish Crow and the Ground dove. The nest of the former, which was placed in a tall tree near the corner of Broad and Orange streets, was not found until May 12, when the young birds were almost fledged. The Ground Dove's nest, among the sand dunes at the eastern end of Sullivan's Island, was found to contain eggs as late as Sept. 25. On Sept. 26, one egg hatched; the other was missing.

Among other breeding records made by members of the Natural History Society may be mentioned those for Worthing-

ton's Marsh Wren or "Tom Tit," Rough winged Swallow, Brown-headed Nuthatch, Green Heron, Kingbird, Crested Flycatcher, Brown Thrasher, Mockingbird, Cardinal, Chimney Swift, Orchard Oriole, Bluebird, Redwinged-Blackbird, Boat-tailed Grackle or Jackdaw, and Carolina Dove.

F. M. WESTON, JR.

THE NATURAL HISTORY SOCIETY

At the regular meeting of Section A on December 2, Miss Sarah Weeks was elected Secretary. A feature of special interest was a roll call, to which each member present responded by giving a brief account of some exotic tree which has been planted in Charleston. Many interesting facts were brought out which suggest that the Museum may, at some future time, publish further study of this subject.

Mr. Francis M. Weston, Jr., discussed the birds of the Rail family before Section A, and also before Section B, which met on December 16. His account of his own experiences with these birds, as well of those of Mr. Wayne, proved most interesting.

Both sections have taken field trips during the month. Section A spent the afternoon of December 10 studying winter birds at the Navy Yard. Section B spent Saturday, December 11, in the study of birds and trees at Mr. Lawton's plantation on James Island.

January meetings of the Society will be held as follows: Section A on Thursday, January 6, at 4.30 P. M. Section B on Thursday, January 13, at 4.30 P. M. The programs for these meetings will be announced in the daily papers.

LIBRARY ACCESSIONS

The library has received as the gift of Mr. Patrick Calhoun, through Mr.* Waring P. Carrington, thirty-four volumes, which include a number of fine old works of travel and several books related to local scientific history, which have long been needed in the work of the Museum. Among the former may be mentioned the voyages of D'Urville, Peron, Durand, Harris, etc., while among the latter are Porcher's Resources of Southern Fields and Forests, Drayton's View of South Carolina, Ramsay's History of South Carolina, and the life of John Bachman. Among miscellaneous works may be mentioned the Southern Agriculturist, volume IV. The Museum would be glad to receive other volumes of this series.

Two astronomical volumes have also been presented to the library by Dr. John Forrest.

Through the courtesy of Mr. Hinson the Museum has been afforded an opportunity of examining an extensive series of notes and correspondence relating to the identity of *Pinus Elliottii* Engelm. and *P. heterophylla* (Ell.).

NOTE: Miss Persis N. Andrews, president of the board of directors of the Hamlin Memorial Hall, Paris, Me., has brought to the attention of the editor a number of errors regarding the history of that institution as given in A Librarian's Vacation in Maine, published in the BULLETIN¹ last spring. The chief of these is that the Hamlin Memorial Hall was given, named, and endowed by Dr. Augustus Choate Hamlin—not by Hon. Hannibal Hamlin.

¹Vol. V. No. 4, pp. 36-37, April, 1909.

INDEX TO VOLUMES I-V.

Adopogon Carolinianus, V 45
Æsculus Pavia, V 43
 AGASSIZ, LOUIS, I 6; II 34; 69; III 3, 27, 59, 60, 61-62, 63, 70: Medalion of, IV 62
 Agassiz Hall, II 6, 15, 18; III 8
 Agricultural Society of South Carolina, V 5, 26, 38
 AIMAR, G. W., V 53
Ajaja rosea, I 32
Aletris farinosa, V 42
Aleyrodes citri, V 52
 ALLEN, SARAH C., V f12
Allium strictum, V 42
 Allspice, Carolina, V 43
Alsine media, V 42
 American Association for Advancement of Science, III 59, 60
 American Association of Museums, II 45, 56, 69; III 3; IV 7; V 5, 48
 Amphibians, I 18
Ancistrodon contortrix, V 40
 ANDREWS, PERSIS N., V 69
Anhinga, IV 37
 ANNELLY, A. M., III 72
Anopheles, I 22
Antennarius oscellatus, note by P. M. REA, V 53-54
 Anthropological collections, III 47; IV 10-11
 Antiquarian Society of Charleston, II 28
 Aquarium, II 9; IV 16
Aplysia, II 55
Apteryx, IV 6
Aramus giganteus, II 55
 Archæological collections, II 3
Ardetta exilis, IV 49
Arisæma triphyllum, V 41
Aronia arbutifolia, V 43
 Art collections, III 9: department, IV 11; V 7
Asclepias tuberosa, V 44: *variegata*, V 44
 ASHLEY, GEORGE HALL, I 6; II 39, 40, 43: Guide to the Museum, II 39; III 71, 74, 77
Asio accipitrinus, III 17: *wilsonianus*, III 17
Astur atricapillus, I 33

Atamosco atamosco, V 42
 AUDUBON, J. J., I 6, 32; II 34; III 55, 66; IV 6, 10, 30, 73; V 37: plates, IV 61; V 3, 8
 Auk, The, IV 56
Azalea nudiflora, V 44
 BACHE, PROF., III 59
 BACHMAN, JOHN, I 32; II 34; III 58, 59, 60, 62, 63, 66, 70; IV 30, 73: Bust of, IV 62
Baleana cisarctica, I 41: *glacialis*, I 41
Baptisia villosa, V 43
 BARNWELL, JOSEPH W., IV f16; V f12
 Bay, Sweet, V 42
 Bayberry, V 42
 BEADLE, C. D., II 8
 Beebird, *see* Kingbird
 BENNETT, JOHN, V 1
 Biltmore, S. C., II, 8
 Biological survey, III 11; IV 16; V 10-11: record forms, I 34-36; V 51: birds, I 44-45; II 19-22, 57-66; III 13-17, 30, 40, 41-46; IV 17-26, 34, 49, 66, 73; V 13-24, 27-32, 40, 67-68: fishes, II 55; V 53, 61-62, 66: invertebrates, II 55; V 52-53, 65: mammals, IV 34: plants 41-45: reptiles, V 40, 54, 62
 Biology, Department of, IV 11 52
 BIRD, WILLIAM, M, V f12
 Bird bulletins, IV 64: collections I 6; V 10, 26: exhibits, I 27-28, II 18, 19-22; III 7-8: exchanges, III 19: guide, by C. A. Reed, II 74; III 20, 32: protection, IV 48; V purchases, IV 56, 57: record form, I 34-36; II 10: records, III 41-46; IV 16, 17-26; V 11, 13-24, 27-32: specimens lent to schools, III 31
 Birds, II 7; IV 9, 16: bibliography, II 21: Ancestors of, by H. R. SASS, IV 57, 64; V 10: April bird life of Otranto, by H. R. SASS, IV 35-42: Apropos of the Roseate Spoonbill, by P. M. REA, I 44-45: Bird life of a city garden, by H. R.

Sass, II 57; V 57-60: Bird skeletons, by P. M. REA, IV 74; V 12: Birds observed in Charleston, by H. R. SASS, V 10: Birds of prey, by H. R. SASS, IV 31: Birds of the coast of South Carolina, by P. M. REA, II 19-22: Birds of the past, by H. R. SASS, IV 13; V 10: Brown Pelican, note by P. M. REA, III 30, 40: Canvas-back and Ring-necked Ducks, note by P. M. REA, IV 34: City bird life, by P. M. REA and H. R. SASS, III 52-54: Demonstration of birds, by Mrs. P. M. REA, II 56; by F. M. WESTON JR., II 73; III 30; V 63, 64: Concerning taxidermy, by P. M. REA, IV 59-61: Early spring arrivals, by H. R. SASS, II 17: Feathered fishermen, by H. R. SASS, IV 13, 14: Feathers, by P. M. REA, IV 73, 74; V 10: Food of birds and their organs of nutrition, by Mrs. P. M. REA, V 12: Frigate bird on Sullivan's Island, by P. M. REA, II 66-67; 68: Habits of the Brown Pelican, by H. R. SASS, III 30, f32, 40; IV 14: Least Bittern in Charleston, note by H. R. SASS, IV 49: Limpkin, note by P. M. REA, II 55: List of October birds, by H. R. SASS, I 26: Migration of birds, by H. R. SASS, III 20, 30: One of Audubon's birds?, by H. R. SASS, III 66-67: Ornithological notes, by H. R. SASS, III 54-55: Owls of Charleston and vicinity, by Mrs. P. M. REA, III 13-17, 19; IV 13, 14: Preliminary survey of the birds of the coast region of South Carolina, by P. M. REA and F. M. WESTON JR., V 13-24, 27-32: Rail family, by F. M. WESTON JR., V 64, 68: Red-throated Loon in Charleston, note by P. M. REA, IV 73: Snowy Heron in South Carolina, by H. R. SASS, IV 47-48: Some ornithological notes, by ROBERT WILSON, I 31-34: Summer bird records, by F. M. WESTON JR., V 67-68: Synopsis of records of the Natural History So-

ciety, for 1906, by Mrs. P. M. REA, III 41-46; for 1907, by P. M. REA and H. R. SASS, IV 17-26: Talks on birds, by H. R. SASS, I 37; II 73: Whistling Swan, note by P. M. REA, V 62
 Bishop-weed, Mock, V 44
 Bittern, III 43; IV 19; V 17: Least, III 46; IV 19, 41, 49; V 11, 17, 58: note by H. R. SASS, IV 49
 Blackbird, Red-winged, II 21, 36, 61; III 42: IV 22, 40; V 23, 68: Rusty, III 45; IV 22
 Black Snake, Pilot, IV 58
 Bladderwort, Swollen, V 45
 BLANK, L., III 31
 Blazing-star, V 42
 Bloodroot, V 42
 Blueberry, V 44
 Bluebird, II 21, 36, 66; III 42; IV 26; V 32, 68
 Blue-eyed Grass, V 42
 "Blue Peter", see Coot, American
 Bluets, V 45: Round-leaved, V 45
 Bobclink, I 26; II 61; III 46; IV 22; V 23
 Bob-white, I 26; II 22, 37, 59; III 42; IV 20; V 20
 BOOTH, HENRY, II 68; III 9, 17
 BOYKIN, C. V., V 54
 BRAGG, LAURA M., V 51, 53: Citrus White Fly, V 52-53: Introduction to the common species of oaks, V 63
 BRAGG, L. M., and REA P. M., Spiders, V 65-66
 BRAINERD, EZRA, IV 9; V 40: Visit to grave of Thomas Walter, III 33-37
 BREWSTER, WILLIAM, III 55; V 38
 Brooklyn Institute, Children's Museum, III 57; V 48
Broussonetia papyrifera, V 42
 Brown Snakes, V 54
 BRYAN, J. P. KENNEDY, IV f16; V f12
Bubo virginianus, III 15
 Buckeye, Red, V 43
 Bull-bat, see Nighthawk
 Bunting, Painted, see Nonpareil
 BURCKMEYER, Mrs. C. R., IV f16
 BURDEN, DR., III 59

BURTON, E. H., IV 34
Butcher-bird, *see* Shrike, Loggerhead
Butneria fertilis, V 43
Butterfly-weed, V 44

CALHOUN, PATRICK, V 69
Capnoides aureum, V 42
Cardinal, I 26; II 21, 36, 62; III 42,
54; IV 23, 40; V 28, 68

CARRINGTON, WARING P., IV f16;
V f12, 69

CARRINGTON, MRS. WARING P., V
f12

Cassine, V 43

Catbird, I 26; II 21, 36, 65; III 44;
IV 25; V 30

Cedar-bird, *see* Waxwing, Cedar

Celtis occidentalis, V 42

Cetaceans, I 38-43

Chalmers Street, Museum in, III 58;
IV 72-73; V 1-2

Chamaelirium luteum, V 42

CHAMBERLAIN, BURNHAM, V 54, 67

CHAMBERLAIN, L. T., III 19

CHAMBERLAIN, RHETT, V 54, 63, 67
Charleston Chamber of Commerce,
IV 65; V 5

Charleston City Council, II 70, 71,
76; III 1, 2, 60, 65; IV 3; V 25, 26,
38

Charleston City Directory, III 58

Charleston County Teachers Associa-
tion, III 21; IV 14

Charleston Courier, III 59, 60, 66, 70,
71; V 1

Charleston Evening News, III 71

Charleston Harbor, Model of, IV 65;
V 5

Charleston Library Society, II 4; III
2, 50; IV 12, 51: museum collec-
tions, II 47-54

Charleston Museum, charter member
American Association Museums,
IV 7, 50; V 48: early accessions
of, II 47-54; III 50, 71: annual
report of director, 1906, III 1-11;
1907, IV 1-16; 1908, V 1-11:
building, II 70; III 1, 68; IV 3,
34, 43-46, 58, 67-72; V 1, 2, 25-26,
38; Bulletin, II 5; III 9; IV 13; V
8: calendar, III f32; V 56; curators,
1850, F. S. HOLMES, III 65, 66,

69-70; 1870, JOHN MCCRADY, III 73;
1873, GABRIEL E. MANIGAULT, III
73; 1900, GEORGE HALL ASHLEY,
III 77; 1903, PAUL M. REA, III 77:
curators, honorary, II 10. 32; III
4, 78; IV 8: directors, 1906, PAUL
M. REA, II, 9: finances, II 70-72; IV
4-5; V 3: membership, II 71-72;
IV 4; V 3; staff, III 3; IV 7

Charleston Museum, History of, I 6;
III 2; IV 1-3; MAZYCK, W. G.
Period previous to 1798, III 49-51,
Period from 1798 to 1850, III 57-
66, Period subsequent to 1850,
III 69-79; REA, P. M., Collections
of the Charleston Library Society
from 1798 to 1815, II 47-54,
History of the Museum, IV 72-73;
V 1-2; WILLIS, EOLA, Life of Dr.
J. L. E. W. Shecut, II 27-32; III
57

1778. Loss of "specimens of
natural history" in burning of
Charleston Library III 51

1798-1815. Early accessions,
II 47-54; III 47

1813. Antiquarian Society, II 28

1814. Literary and Philosophical
Society, II 29; III 2, 57

1815. Transfer of Museum from
Charleston Library to Literary
and Philosophical Society, II 29;
III 57; IV 2. Appointment of Dr.
Felix L'Herminier as superinten-
dent, and purchase of his collec-
tion, II 29-30; IV 26

1826-1827. Museum of the
Literary and Philosophical Society
in Chalmers Street, III 57; IV
72-73; V 2

1828. Transfer of Museum to
Medical College, IV 2, 72-73; V 1

1829-1830. Accessions, IV 73

1843-1846. Reference to Mu-
seum in catalogues of Medical
College, III 58

1850. Transfer of Museum from
Medical College to College of
Charleston, III 69-70

1863. Removal of Museum to
Edgefield, S. C., III 72

1865. Burning of specimens and

- records, III 49, 72
 1906. Title of curator changed to director, II 9. Name of Museum changed to Charleston Museum, II 71; III 1, 78-79
 1908. New building occupied, IV 58; V 26
- Charleston Natural History Society, I 26-27; II 5-6; III 10; IV 14; V 9; constitution, I 11; V 50, 63; calendar IV 57, 65, 74; V 12; field trips, II 73; IV 31, 57, 65; V 10, 12, 56, 63, 68; meetings, II 17, 55, 68, 73; III 12, 19, 30, f32, 40, 55; IV 14, 31 49, 56, 61, 64, 72; V 12, 40, 50, 56, 63, 64, 68; officers, II 45; III 47; IV 49, 64; V 63; organization, I 10; II 6
- Charleston Natural History Society, lectures, talks, etc., BRAGG, L. M., V 63; REA, P. M., IV 64, 73, 74; V 10, 12, 56, 63; REA, MRS. P. M., II 56; III 13-17, 19; IV 13, 14; V 12; SASS, H. R., I 57; II 17, 73; III 20, 30, f32, 40; IV 14, 31, 57, 64; V 10; WESTON, F. M. JR., II 56, 73; III 30; V 63, 64
- CHASE, AGNES, III 56; IV 9
- Chat, Yellow-breasted, III 46, 53; IV 25; V 30
- Cherry, Wild, V 43
- Cherry-laurel, V 43
- "Cheweeka," *see* Plover, Killdeer
- Chewink, *see* Towhee
- Chickadee, I 26; Carolina, II 21, 36; III 42; IV 26; V 32
- Chimiphila maculata*, V 44
- Chimney Swift, I, 26; II 37, 60; III 45, 54; IV 21, 31, 42; V 23, 68
- China Tree, V 43
- Chokeberry, V 43
- Chrysopsis Mariana*, V 45
- Chuck-will's-widow, III 46, 54; IV 21, 42; V 22
- Cinquefoil, V 43
- Citrus White Fly, V 22-23
- Clover, Hop, V 43
- Cnidocolus stimulosus*, V 43
- Colic Root, V 42
- College of Charleston, III 3, 58, 59, 69, 71, 74, 75; Board of Trustees of, III 59, 60, 61, 65, 66, 70, 72, 77, 79; Library of, IV 11, 52
- Coluber guttatus*, V 54
- Conchological collections, *see* Shell collections
- Contributions from the Museum, II 5; IV 13; V 8, 9, 55
- Coot, American, II 22; III 45; IV 19, 36; V 11, 19
- Copperhead, V 40
- Coral Snake, V 62
- Cormorant, Double-crested, V 16, 58; Florida, IV 19; V 16, 58
- Corn Snake, V 54
- Cornus florida*, V 44
- Corydalis, Golden, V 42
- COUES, ELLIOTT, Synopsis of birds of S. C., 1868, II 18, 21; V 14
- COUPER, JAMES HAMILTON, III 71, 72
- Courtenay School, III 67
- Cowbird, III 43; IV 22; V 33, 60
- Cracca spicata*, V 43
- Crane's-bill, Carolina, V 43
- Crawfish, I 17
- Creeper, Black and White, *see* Warbler, Black and White
- Creeper, Brown, II 21, 65; III 44; IV 25; V 31
- CREIGHTON, ANNIE, V 54
- Crested Tit, I 26
- Crow, I 26; II 22, 36, 60; III 42, 54; IV 22; V 22; Fish, II 22, 36, 60; III 54; IV 22; V 22, 67
- Crowfoot, V 42
- Crying-bird, *see* Limpkin
- Cuckoo, Yellow-billed, I 26; II 60; III 45, 53; IV 21, 31; V 22
- Culer, I 23
- Curlow, Hudsonian, III 46; IV 20; V 20, 59
- CUYIER, Bust of, IV 62
- Cyclophus astivus*, V 54
- Dabchick, *see* Grebe, Pied-billed
- Dandelion, Carolina Dwarf, V 45
- DARWIN, CHARLES, I 2
- DE LA MOTTA, J., III 58
- Dendropogon usneoides*, V 42
- DE SAUSSURE, PROF., II 43
- Dewberry, Southern, V 43
- Dinornis maximus*, II 14
- Diver, *see* Grebe, Least

Diver, Red-throated, *see* Loon, Red-throated
 Dogwood, Flowering, V 44
 Dolphin, Bottle-nosed, III 68
 DONAHUE, T. M., V 54
 DOTTERER, HENRY, IV 49
 DOUBLEDAY, PAGE & Co., IV 16
 Dove, Mourning, Carolina, or Common, I 26; II 22, 37, 59; III 42, 53; IV 26; V 20, 68; Ground, III 43; IV 20; V 21, 67
 Dowitcher, V 19
 DRAYTON, JOHN, II 29; III 34
 Dredges, IV 16
Duchesnea Indica, V 43
 Duck, Black, III 45; IV 19; V 16: Buffle-head or Butterball, V 17, 58; Canvas-back, II 37; III 45; IV 19, 34; V 11, 17; Golden-eye, II 22; IV 19; V 17; Mallard, II 22; IV 19; V 16, 58; Pintail, II 22; III 45; IV 19; V 17; Ring-necked, IV 34; V 17; Ruddy, II 22; III 45; IV 19; Scaup, II 37; III 43; IV 19; Greater Scaup, V 17, 58; Lesser Scaup, II 22; V 17, 58; Surf Scoter, V 17; Wood, III 43; IV 19, 41; V 17
 Duck, Blackhead, *see* Duck, Scaup
 Duck, Summer, *see* Duck, Wood
 DURANT, MRS. N. M., V f12
 DYER, ANNE H., III 38
 Eagle, Bald, I 33; II 22, 37, 60; III 42, 68; IV 20; V 21
 Earthworms, I 17
 Easter Lily, V 42
 Educational Convention at Columbia, S. C., Dec., 1908, IV 7
 Educational work, II 2; III 10; IV 13-16, 28; V 9-10
 Edgefield, S. C., Museum moved to, III 72
 Egret, I 33; American, II 58; IV 19, 41; V 18, 40
Egretta candidissima, IV 47
Elaps fulvius, V 62
 ELLIOTT, STEPHEN, I 6; II 29, 30; III 62
 Elliott Herbarium, I 6; II 8, 34-35; III 6, 56, 74; IV 9, 16, 29
 Elliott Society of Natural History, III

71; IV 12, 30, 52; Proceedings of, III 33
 Emeu eggs, V 39
Epeira caucur, V 66
Erigeron Philadelphicum, V 45: *pulchellus*, V 45
Erythrina herbacea, V 43
 Exchanges, Specimen, II 7
 Exhibition cases, I 4; IV 45
 Exhibition collections, I 3
 Exhibits at the Museum, birds, I 27-28; II 18, 19-22; III 7-8: etchings by Charles Henry White, IV 50; V 7: geology and mineralogy, II 39-44: live owls, III 13, 31: living reptiles, IV 43, 49, 58, 65; V 6, 40: Japanese prints, III 38-39; IV 11; V 40: Manigault osteological collection, II 11-16: meteorology, V 47, 49-50: whales and dolphins, I 38-43: wild-flower table, V 39, 41
Falco peregrinus, I 34
 Fetterbush, V 44
 FICKEN, JOHN F., IV f16; V f12
 Figwort, V 45
 Finch, Purple, III 53; IV 22; V 24
 FISHER, A. K., II 14, 16
 Flax, Common, V 43
 Fleabane, Common, V 45
 Flicker, I 26; II 22, 36, 60; III 42, 54; IV 21; V 22
 Flycatcher, Acadian, V 23: Crested, II 61; III 45, 54; IV 22, 40, 41; V 23, 68
 FORREST, JOHN, V 69
 "Fossil man of Guadeloupe," IV 29
 Fossils, II 43, 68; III 17-18, 58, 59, 60, 71; IV 10: invertebrate, II 7: plant, V 54: phosphate, I 7; V 54
 FRAMPTON, LIEZE, V 54
Fregata aquila, II 66
 Frigate Bird, V 16; on Sullivan's Island, by P. M. REA, II 66-67
 Frog, I 18
 FROST, DR., III 69
Fumaria officinalis, V 42
 Fumitory, V 42
Gallus bankiva, I 27
 Gallinule, Florida, III 43; IV 19, 36;

V 19: Purple, V 19
 Gannet, I 34
 "Gannet," see Ibis, Wood
 GARDEN, ALEXANDER, III 61
 Garter Snake, IV 49
Gelsemium sempervirens, V 44
 Geological collections, II 7, 39-44, 46;
 III 8-9, 17-19, 59; IV 10; V 6, 26,
 33-35
Geranium Carolinianum, V 43
 GIBBES, LEWIS R., II 21; III 58, 62,
 70
 GIBBES, MARIA, V 66
 GIBBES, R. W., III 19, 62
 Gila Monster, IV 49
 Ginger, Wild, V 45
Giraffa camelopardalis, II 11
 Giraffe, II 11-14
 Glass Snake, IV 49
 Golden-aster, V 45
 Golden-club, V 41
 Goldfinch, II 21, 62; III 44, 54; IV
 22; V 24
 GOLDSMITH, MOMER, IV 74
 GOODE, G. BROWN, V 61
 Goose, Canada, II 58; IV 19; V 17
 Goose Creek, IV 35
 Gnatcatcher, Blue-gray, II 37, 66;
 III 42; IV 26, 40; V 32
 Grackle, Boat-tailed, II 22, 36; III 42,
 53; IV 22; V 24, 68; Florida, IV
 22, 40; V 24: Purple, I 26; II 36:
 Rusty, II 37; V 24
 Grass-pink, V 42
Grotio sphaerocarpa, V 45
 GRAY, C. M., IV 34
 Grebe, Horned, III 43; IV 18; V 15:
 Least, II 58: Pied-billed, I 26; II
 22, 37; IV 18, 41; V 15
 Green Snake, Keeled-scaled, V 54
 Goshawk, I 33
 Grossbeak, Black-headed, III 66; IV
 10: Blue, IV 23; V 28
 Ground-cherry, Virginia, V 44
 Groundsel, V 45
Guara rubra, III 55
 Gull, Bonaparte's, III 45; IV 18; V 15,
 51: Herring, I 26; II 22, 37, 58;
 III 43; IV 18; V 15: Laughing,
 III 45; IV 18; V 15, 57: Ring-
 billed, II 22, 37, 58; III 45; IV
 18; V 15, 57

HAGOOD, JOHNSON, III 76
 HALL, WILLIAM, III 50
 HANNAHAN, J. ROSS, V f12
 Hare's Lettuce, V 45
 Harper's Magazine, IV 50
 HARRIS, W. L., II 55
Hartmannia speciosa, V 44
 HARVEY, WILSON G., IV f16; V f12
 Hawk, Chicken, see Hawk, Cooper's
 Hawk, Cooper's, I 26; II 22, 36, 60;
 III 42; IV 20; V 21: Duck, I 34; IV
 21; V 21: Fish, I 34; II 22, 36,
 60; III 45, 53; IV 21, 42; V 12, 21:
 Florida Red-shouldered, IV 20;
 V 21, 60: Marsh, II 22, 36; III
 44; IV 20; V 21, 40: Pigeon, III
 53; IV 21; V 21: Red-tailed, II
 22, 60; III 45; IV 20; V 21: Sharp-
 shinned, I 26; II 26, 36, 59; III
 44, 53; IV 20; V 21: Sparrow, I
 26; II 22, 36, 60; III 43; IV 21;
 V 21
 Hedge-hyssop, V 45
Helianthemum Carolinianum, V 43
Hediotropium Indicum, V 44
 Herbarium of H. W. RAVENEL, see
 Ravenel herbarium: of STEPHEN
 ELLIOTT, see Elliott herbarium
 HERNDON, LIEUTENANT, III 47; IV 11
 Heron, Great Blue, I 26, 33; II 22, 37,
 58; III 42; IV 19, 41; V 17: Green
 II 59; III 45, 53; IV 19, 39, 47;
 V 18, 68: Little Blue, I 26, 33;
 II 37, 59; III 42; IV 19; V 18:
 Louisiana, I 33; III 43, 53; IV
 19, 47; V 18: Night, Black-crown-
 ed, I 26, 32; II 59; III 43; IV 19,
 48; V 18: Night, Yellow-crowned,
 I 32; V 18, 59: Snowy, V 11, 18,
 40, 59; in South Carolina, by H. R.
 SASS, IV 47-48
Herastylas arifolium, V 45
 HINSON, W. G., IV f12; V 55, 69
 Hog-nosed Snake, V 54
 HOLBROOK, J. E., I 6; II 34; III 59,
 62; IV 30
 HOLMES, A. BARON, V 54
 HOLMES, F. S., I 6; II 39, 40, 44; III
 49, 58, 59, 60, 62, 63, 64, 66, 69-70,
 71, 72, 73: Portrait of, IV 62
 HOLMES, GEORGE S., IV f16; V f12
 HOLMES, HENRY S., V f12

HOLMES, MRS. HENRY S., III 13;
IV 61; V 3, 8, f12
HOLMES, JAMES H., V 54
HOLMES, MRS. JAMES H., V 54
Holmes Hall, II 7, 11, 15, 17; III 7
Holothurian, III 31
Honeysuckle, Wild, V 44
HORLBECK, ELIAS, III 58
HORNBLLOWER & MARSHALL, III 31;
IV 3
Horse-nettle, V 44
Houstonia retundifolia, V 45: *serpyllifolia*, V 45
Huckleberry, V 44
HUGHES, EDWARD W., V f12
Human head, mummied, III 47; IV 11
HUMME, F. W., III 58; V 54
Hummingbird, Ruby-throated, I 26;
II 61; III 45; IV 21; V 23
HUTCHINSON, T. L., III 58
HUXLEY, THOMAS, Bust of, IV 62
Hypoxis hirsuta, V 42

Ibis, Scarlet, III 55: Wood, III 43, 53;
IV 19; V 17
Ilex vomitoria, V 43
Indian Pullet, *see* Heron, Black-
crowned Night
Indigo, Wild, V 43
Installation in new building, IV 43-46;
V 1, 25, 26
Invertebrate collections, II 8, 55;
III 6
Ionoxalis violacea, V 43
Iron and steel industry, *see* Travelling
exhibits
IRVING, AGNES K., IV f16; V f12
Istiophorus nigricans, V 61, 66

Jabiru, IV 29
Jackdaw, *see* Grackle, Boat-tailed
Jack-in-the-pulpit, V 41
Japanese art, II 73: engravings, III
38-39, 40; IV 11
Jay, Blue, I 26; II 22, 36, 60; III 42,
54; IV 22; V 23, 67
JERVEY, FRANCES, II 4; III 9; IV 12,
52
Jessamine, Yellow, V 44
Junco, II 22, 37; III 44; IV 23; V 27,
40, 60

KELLERS, H. C., IV 65
KELLY, HENRIETTA A., V 64
KENNEDY, J. D., III 76
Killdeer, *see* Plover, Killdeer
KING, MITCHELL, III 65, 70
King Snake, V 40, 54: Scarlet, V 62
Kingbird, II 61; III 45, 54; IV 22, 31,
40, 41; V 23, 40
Kingfisher, Belted, I 26; II 22, 36,
60; III 42; IV 21; V 22, 67, 68
Kinglet, Golden-crowned, II 37, 66;
III 54; IV 26; V 32: Ruby-crowned
II 22; III 44; IV 26; V 32
Kite, Mississippi, V 21: Swallow-
tailed, II 37; III 46; IV 20; V 21,
59
KLINCK, ELIZABETH, V 46
Kneiffia fruticosa, V 44
Knotweed, V 42
KRESSEL, FRANK, II 55
KURTZ, LIEUTENANT, III 59

Labels, I 5, 7; II 8: IV 28, 44
Lacelark Tree, V 54
Lamium amplexiculle, V 45
Lantern slides, IV 16, 66
LAPHAM, SAMUEL, IV f16; V f12
LAPHAM, SAMUEL JR., IV 73; V 11
Laurel, Wild, V 44
LAURENS, HENRY, II 56; III 3
Laurocerasus, V 43
LAWTON, ST. J. ALISON, V 68
Leather Flower, V 42
Lectures, II 2: by D. S. MARTIN, II
38; III f32, 40; IV 14: by P. M.
REA, I 19-26, 37, 38; II 18, 22-25,
68, 76; III 10, 31, f32; IV 7, 13,
34, 42; V 10, 56: by MRS. P. M. REA,
III 21-29; IV 13, 14: by N. W.
STEPHENSON, IV 11, 49; V 7, 10:
see also, Charleston Natural Hist-
ory Society, lectures, talks, etc.
LEGGE, L. K., IV 57, 65
LESESNE, D. S., V 62
LESLIE, C. C., II 55
L'HERMINIER, FLLIX, II 29, 32; III
2, 56, 57; IV 2, 6
Librarian, III 3; Nced of, IV 1, 8, 55:
appointed, V 39, 53
Library, I 29; II 4; III 9; IV 11-13,
43, 44, 50, 51-56: accessions, IV

- 62-64; V 69: Opening of, IV 61-62; V 7-8
 Life-history notebook, V 51
Linodermum tuberosum, V 42
 Limpkin, V 18: note by P. M. Rea, II 55
Linaria Canadensis, V 45
 LINNEAUS, I 1; III 61: Bust of, IV 62
Linum usitatissimum, V 43
 Literary and Philosophical Society of South Carolina, II 29; III 2, 56, 57, 58, 63; IV 72
 Lizards, I 18; IV 49
 Liver-fluke, I 20
 Local fauna, *see* Biological survey
Lonicera sempervirens, V 45
 Loon, IV 18; V 15, 18, 40, 57: Red-throated, II 22, 37; III 43; IV 73; V 11, 15
 McCormack, W. J., IV f16; V f12
 McCrady, John, IV 16: Portrait of, IV 16, 62
 McDowell, W. K., III 68; IV 34; V 54
 MacFarlane, John M., IV 9
 McLeod, W. E., III 68
Magnolia Virginiana, V 42
 Malaria, I 21
 Mallard, *see* Duck, Mallard
 Manigault, G. E., I 6; II 7, 39, 40, 41, 43; III 73-75: Portrait of, IV 62
 Manigault Hall, I 7, 8, 29; II 2-3, 17, 18, 22, 38, 44, 56, 68, 73; III 20, 30, 47, 55; IV 11, 30, 34, 50; V 40
 Manigault osteological collections, II 7, 11, 17; III 4, 7
 Manufacturers, Bankers & Jobbers Association, IV 7; V 5
 Marine Biological Laboratory, Woods Hole, Mass., II 46, 55; III 48
 Marine fauna, IV 16
 Marsh Hen, *see* Rail, Clapper
 Martin, D. S., II 7, 26, 32, 46; III 4, 8, 17, 20, 48, 78; IV 8, 10, 14; V 6, 38: General report on geology and mineralogy, II 39: Occurrence of precious stones in the United States, II 38: Piedmont mineral collection, V 33-35: Scientific basis of fairy lore, III f32, 40
 Martin, Purple, II 22, 37, 63; III 45, 54; IV 23, 42; V 28
 Maryland Academy of Science, III 18
 MAURY, LIEUTENANT, III 59
 MAZYCK, P. P., III 4
 MAZYCK, W. G., II 26, 33, 38; III 4, 7, 78; IV 1, 8, 72, 74; V 1, 46: History of the Museum, III 49-51, 57-66, 69-79
 Meadowlark, I 26; II 22, 36, 62; III 44; IV 22, V 23, 67
 Medic, V 43
Medicago lupulina, V 43
 Medical College of South Carolina, III 58, 59, 63, 69, 75; IV 72
 Medical Society of South Carolina, IV 52
Megascops asio floridanus, III 16
Melia Azedarach, V 43
 Mephit, Yellow, V 43
Melilotus officinalis, V 43
 Memminger Alumnae Association, IV 34, 42
 Memminger Normal School, III 20
 Merganser, Hooded, II 22, 37; III 43; IV 19; V 16, 58: Red-breasted, IV 19; V 16, 58
 Meteorological Exhibit, V 47, 49-50
 METIVIER, FATHER, V 62
 MICHAUX, F. A., V 55
 MIGUEL, JEAN, III 18
 Milkweed, White, V 44
 MILLER, W. L., V 54
 Minerals, III 71; V 33-35
 MITCHELL, JULIAN, V f12
Mitchella repens, V 45
 Mixson, W. H., IV f16
 Moa, II 14-16
 Moissan, Highland, *see* Copperhead
 Mockingbird, I 26; II 21, 36, 65; III 54; IV 25; V 30, 42, 68
Mohrodendron distichum, V 44
 MORDECAI, T. M., V f12
Morella cerifera, V 42
Morus alba, V 64
 Mosquito, I 22-25, 30
 Mud-puppy, I 18
 Mulberry, Paper, V 42: White, V 64
 MURDOCH, HENRIETTA, IV 74; V 8
 MURDOCH, JAMES S., IV f16; V f12
Mus norvegicus, IV 34; V 11: *rattus*, IV 34; V 11

Museum exhibits, Preparation of,
by P. M. REA, IV 43-46
Museum News, Brooklyn, N. Y.,
Extract from, II 74-75
Museum records, by P. M. REA, III
4; IV 27-30
Museums of Natural History and
their work, by P. M. REA, I 1-7
Myriapods, I 18

National Association for the Study
and prevention of Tuberculosis,
V 55

Nature Club, III 67

Nettle, Dead, V 45; Spurge, V 43

New York Botanical Garden, III 18;
V 54

News & Courier, III 75; IV 65; V 61

Newspapers of Charleston, IV 13; V 9

Newts, I 18

Nighthawk, I 26; II 60; III 46; IV
21, 41; V 23

Nonpareil, I 26; II 37, 62; III 45, 54;
IV 23, 31, 42; V 28

Nordecaper, I 41

North State Lumber Co. III 40

Nuthatch, Brown-headed, II 21, 65;
III 43; IV 26, 40; V 31, 68: Red-
breasted, III 45; IV 26; V 31:
White-breasted, II 21, 36, 65;
Florida White-breasted, III 43;
IV 25, 40; V 31

Nyctea nyctea, III 17

Nyctiardea violacea, I 32: *grisea nae-*
via, I 32

Oak, Willow, III 35

Oenothera humifusa, V 44: *laciniata*,
V 44

Old Charles Town, V 63

"Old Kate," IV 38

Olive, American, V 44

OLNEY, LOTTIE S., III 67; IV 73

Olor columbianus, V 62

O'NEILL, ISABEL, V 63

Ophibolus deliatus coccineus, V 62;
getulus, V 40, 54

Oriole, Orchard, II 62; III 45, 54;
IV 22, 31, 40, 42; V 24, 68

Orontium aquaticum, V 41

Orphan House, Sisters of, III 13

Osteological collections, I 30; II 7:

see also Manigault osteological
collection

Osmanthus Americana, V 44

Osprey, *see* Hawk, Fish

Otranto, April bird life of, by H. R.
SASS, IV 35-42

Ovenbird, I 26; II 22, 64; III 46, 54;
IV 24; V 30

Owl, Barn, III 13, 15; IV 21; V 21:
Barred, II 22; III 13: Florida
Barred, III 16, 43; IV 21; V 22:
Great Horned, III 13, 15, 16; IV
21, 41; V 22: Long-eared, III 17:
Saw-whet, III 17: Florida Screech,
III 13; IV 21; V 22: Short-eared,
III 17: Snowy, III 17

Owl, Hoot, *see* Owl, Florida Barred

Owls of Charleston and vicinity, by
MRS. P. M. REA, III 13-17

Oxyopes viridans, V 65

Oyster-catcher, II 37; III 43; IV 20;
V 20

Padus scrotina, V 43

Palæornis columboides, IV 34

Palæontological collections, III 60

Parasites, I 19

Park Commissioners, Board of, V 38

Paroquet, Blue-winged, IV 34: Car-
olina, IV 6, 62; V 6

Partridge-berry, V 45

PASSAILAIGUE, T. W., II 9; III 5

Pavo cristatus, I 27

Peacock, I 27-28

Peerless, The, IV 61

Pelican, Brown, II 58; III 30, 40, 46;
IV 19; V 16: note by P. M. REA,
III 30, 40

Petrified wood, IV 74

Pewee, Wood, I 26; III 45, 53; IV
19, 22, 41; V 23

Phacelton athericus, IV 65

Pheasant, I 27-28: Argus, I 28: Eng-
lish, I 8: Fire-back, I 28: Golden,
I 28; III 68; IV 34; V 54: Japanese,
I 28: Silver, I 28

Phoebe, II 22, 36, 60; III 44; IV 22;
V 23

Phosphate deposits, I 7: *see also*
Fossils, *also* Shepard collection of
phosphates

Physalis Virginiana, V 44

Piedmont mineral collection, V 33-35
Picris Mariana, V 44: *nitida*, V 44
 PINCKNEY, THOMAS, IV f16; V f12
 Pine, Long-leaf, V 41
Pinguicula lutea, V 45
Pinguicula, Yellow, V 45
 Pink, Fire, V 42: Wild, V 42
Pinus pilustris, V 41
 Pipit, *see* Titlark
 Plant record form, V 39
 Plants, V 41-45
Plasmodium, I 21
 Plover, Black-bellied, IV 20; V 20:
 Killdeer, I 26; II 22, 37, 59; III
 44; IV 20; V 20, 40, 67: Semi-
 palmated, IV 20; V 20, 59: Wil-
 son's II 22, 37; III 46; IV 20; V 20
Pogonia ophioglossoides, V 42
 POLLITZER, MABEL, III 47
Polycodium stamineum, V 44
Polygala sp., V 43
Polygonum maritimum, V 42
 "Poor Jo," *see* Heron, Great Blue
 PORCHER, EZEKIEL, III 36, 48
 PORCHER, W. G., III 48
Potentilla Canadensis, V 43
 Printing outfit, IV 7; V 4, 25, 39
Pseudopriacanthus altus, II 55
Ptilimnium capillaceum, V 44
 PUTNAM, F. W., III 47; IV 10
Pyrus angustifolia, III 36

Quercus phellos, III 36
 Queen Snake, V 54

 Rail, Carolina, V 18: Clapper, I 26;
 II 22, 37, 59; III 43; IV 19; V 18:
 Wayne's Clapper, III 42; V 18:
 King, IV 19; V 18: Virginia, V 18:
 Yellow, IV 19; V 19
 Raincrow, *see* Cuckoo, Yellow-billed
 RAMSEY, DAVID, II 29; III 50
 RANDOLPH, HARRISON, III 76, 77, 78
Ranunculus muricatus, V 42
 Raptures, III 14
 Rat, Black, IV 34; V 11: Brown, IV
 34; V 11: Cotton, V 11: hybrid,
 V 11
 Rattlesnake, Diamond-backed, IV
 49, 58: Southern Pigny, V 55
 RAVENEL, DANIEL, III 73
 RAVENEL, EDMUND, II 37; III 7

RAVENEL, H. W., III 33, 56, 70
 RAVENEL, J. R. P., V f12
 RAVENEL, PRIGLEAU, IV 49
 Ravenel conchological collections,
 II 37
 Ravenel herbarium, III 56; IV 9
 REA, PAUL M., II 45; III 47, 50, 68,
 80; IV 7, 12, 47, 52, 56; V 50:
 elected professor of biology and
 geology in the College of Char-
 leston and curator of the Museum,
 III 77-78: title changed from cu-
 rator to director, II 9: instructor,
 Marine Biological Laboratory,
 Woods Hole, Mass., II 45-46;
 III 48: secretary, Amer. Assoc.
 of Museums, IV 7, 49; V 5, 48:
 annual report, 1905, II 1-10;
 1906, III 1-11; 1907, IV 1-16;
 1908, V 1-11: *Antennarius os-
 cellatus*, note on, V 53-54: Apro-
 pos of the Roseate Spoonbill,
 I 44-45: Arbor Day address at
 Summerville, S. C., I 37: Autumn
 foliage, V 56, 63: Bird skeletons,
 IV 74; V 12: Brown pelican, note
 on, III 30, 40: Canvas-back Duck,
 Ring-necked Duck, and Black
 Rat, note on, IV 34: Collections
 of the Charleston Library Soci-
 ety from 1798 to 1815, II 47-54:
 Concerning taxidermy, IV 59-61:
 Feathers, IV 64, 73; V 10: Frig-
 ate Bird on Sullivan's Island, II
 66-67: Geological history of the
 Great Lakes, II 18: History of
 the Museum, IV 72-73; V 1-2:
 Limpkin in Charleston, S. C., II
 55: Manigault osteological col-
 lection, Giraffe and Moa, II 11-17:
 Manufacturers, Bankers & Job-
 bers Association, address before,
 IV 7: The Museum library, IV
 51-56: Museum records, III 48;
 IV 7, 27-30: Museums of natural
 history and their work, I 1-7:
 Needs of the Museum, V 25-26:
 New meteorological exhibit, V
 56: Parasites, mosquitoes and
 disease, I 19-26: Preparation of
 museum exhibits, IV 43-46:
 Red-throated Loon in Charleston,

- IV 73: Sailfish, Whistling Swan, and Coral Snake, V 61-62: Sailfish, a correction, V 66: Sea-hare in Charleston Harbor, note on, II 55: Short Big-eye on the coast of South Carolina, note on, II 55: Thomas Walter's grave, note on, III 36: Theory of killing and preserving, I 15-18: Treasures of the Charleston Museum and what they mean to the people, IV 34, 42; V 10: Typhoid fever, II 18, 22-25: DeVries and evolution by mutation, III f32, 40: Evolution of human society, III f32: History of biology before Darwin, II 76: Mendel's law of hybrid inheritance, III f32: Organic evolution and kindred biological problems, II 68; III 31; IV 13: Weismann and theories of heredity, III f32: Weather forecasting, V 56: Whales and whaling, I 38:
- REA, P. M. and BRAGG, L. M., Spiders, V 65-66
- REA, P. M. and REA, Mrs. P. M., Birds of the coast region of South Carolina, II 19-22
- REA, P. M. and SASS, H. R., City bird life, III 52-54: Synopsis of bird records for 1907, IV 17-26
- REA, P. M. and WESTON, F. M. JR., Preliminary survey of the birds of the coast region of South Carolina, V 13-24, 27-32
- REA, Mrs. P. M., II 4, 45; III 67; IV 12, 49, 52, 56, 61: Demonstration of local birds, II 56: Food of birds and their organs of nutrition, V 12: Owls of Charleston and vicinity, III 13-17, 19; IV 13, 14: Relation of the Museum to the schools, III 21-29; IV 13, 14: Synopsis of bird work of Natural History Society, 1906, III 41-46, 47
- REA, Mrs. P. M. and REA, P. M., Birds of the coast region of South Carolina, II 19-22
- READ, JOHN R., V f12
- Reading room, Opening of, IV 55
- Redbird, *see* Cardinal
- Redstart, I 26; II 65; III 46, 54; IV 25; V 30
- REED, C. K., II 74
- REENSTJERNA, O. F., IV 34
- Regulecus glesne*, *see Istiophorus nigricans*
- Reptiles, Collection of living, V 6
- RHETT, R. GOODWYN, IV f16; V f12
- Ricebird, *see* Bobolink
- RIECKE, A. W., II 38
- RIVERS, M. W., III 30
- RIVERS, M. RUTLEDGE, IV f16
- Robin, II 21, 36, 66; III 44, 54; IV 26; V 32
- Robin's Plantain, V 45
- Rock and mineral collection, II 26, 39-44
- Rock-rose, V 43
- Rosa Cherokeensis*, V 43
- ROSE, Mrs. JENNIE HASKELL, IV 62
- Rose, Cherokee, V 43
- Rubus tricalis*, V 43
- Rue, Goat's, V 43
- Rural School Improvement Association, IV 7, 15
- Russian mineral collection, II 41; IV 28
- Sage, Lyre-leaved, V 45
- Sailfish, notes by P. M. REA, V 61-62, 66
- St. HILAIRE, Bust of, IV 62
- Salamanders, I 18
- SALLEY, FITZHUGH, I 27; III 4; IV 56; V 8
- Salvia lyrati*, V 45
- Sanderling, I 33; III 43; IV 20; V 19
- Sandpiper, Bartramian, II 37; III 46; IV 20; V 20: Least, V 19: Red-backed, IV 20; V 19: Semipalmated, V 19, 59: Spotted, III 43; IV 20; V 20, 59: Western, IV 20; V 19: White-rumped, V 19
- Sandwich Island helmet, IV 11, 29
- Sanguinaria Canadensis*, V 42
- Sapsucker, Yellow-bellied, I 26; II 22, 36, 60; III 44; IV 21; V 22
- Sarracenia Catesbaei*, IV 9: *minor*, V 42
- SASS, G. HERBERT, IV f16
- SASS, HERBERT R., III 4, 5, 47, 48, 78; IV 8, 10, 12, 41, 42, 65; V 4,

- 8, 11: Ancestors of birds, IV 57, 64; V 10: April bird life of Otranto, IV 35-42: Bird life of a city garden, II 57-66; V 14, 57-60: Birds observed in Charleston, V 10: Birds of prey, IV 31: Birds of the past, IV 31; V 10: Early spring arrivals, II 17: Feathered fishermen, IV 14, 31: Habits of the Brown Pelican, III 30, f32, 40; IV 14: Least Bittern in Charleston, note on, IV 49: List of October birds, I 26: Migration of birds, III 20, 30: One of Audubon's birds?, III 66-67: Ornithological notes, III 54-55: Snowy Heron in South Carolina, IV 47-48: Talk on birds, I 37; II 73
- SASS, H. R., and REA, P. M., City bird life, III 52-54: Synopsis of bird records for 1907, IV 17-26
- SCHILLINGS, C. G., Flashlights in the jungle, notice of, II 18
- SCHNIERLE, JOHN, III 70
- Schools, Relation of museum to, by MRS. P. M. REA, III 21-29: Work with, III 47, 67, 80: IV 14-15, 34; V 5, 10
- Science, IV 13; V 9
- Sciurus niger*, IV 66
- Scoter, Surf, *see* Duck, Surf Scoter
- Scutellaria integrifolia*, V 45
- Sea-cucumber, III 31
- Sea-hare II 55
- Senecio lobatus*, V 45
- SEWELL, H. B., III 67; IV 16, 56, 63; V 8, f12
- SEWELL, MRS. H. B., IV 56, 63; V 3, 8, f12
- SHECUT, JOHN L. E. W., II 27-32, 34; III 57; IV 2
- Shell collections, II 26, 37; III 7, 71-72; V 46
- Shepard collection of phosphates, II 41, 42; IV 29
- SHEPARD, CHARLES U., JR., II 41; III 59, 70
- SHEPPARD, J. C., III 76
- Short Big-eye, II 55
- Shrike, Loggerhead, I 26; II 21, 36; III 42; IV 24; V 16, 28
- Silene Pennsylvanica*, V 42: *Virginica*, V 42
- Silver-bell Tree, V 44
- SIMONDS, LOUIS, III 68
- SIMONS, JAMES, IV f16
- Siskin, Pine, III 45; IV 22; V 24, 60: note by H. R. Sass, V 37
- Sistrurus miliarias*, V 55
- Sisyrinchium angustifolium*, V 42
- Sitilias Caroliniana*, V 45
- Skimmer, Black, III 46; IV 18; V 16, 40, 58
- Skullcap, V 45
- SLOAN, ANNIE, IV 49, 64; V 63
- SLOAN, EARLE, II 43; V 35
- SMALL, Flora of Southeastern United States, III 34; V 39, 41
- SMITH, HENRY A. M., IV f16; V f12
- SMYTHE, AUGUSTINE T., IV f16
- Snake Bird, IV 37
- Snake-mouth, V 42
- Snakes, V 11: Collection of live, V 6
- Snake, Wilson's, III 53; IV 19; V 19
- Snowbird, *see* Junco
- Societies, Publications of, IV 53-55
- Solanum Carolinense*, V 44
- Solenodon, IV 29
- Sonchus oleraceus*, V 45
- Sora, *see* Rail, Carolina
- Sorrell, Lady's, V 43: Purple Wood, V 43
- South Carolina, Audubon Society, IV 47: Historical Society, III 34: Legislature, An act to create a museum... in Charleston, III 75-76: Rural School Improvement Association, III 80
- South Carolina and American General Gazette, III 58
- Southern Literary Gazette, IV 32
- Spanish Bayonet, V 42
- Spanish Moss, V 42
- Sparrow, Bachman's, IV 23; V 27: Chipping, II 21, 36; III 43; IV 23; V 27, 60: English, II 21, 36: Field, II 21; III 43, 53; IV 23; V 27, 67: Fox, III 53; IV 23; V 27: Grasshopper, IV 22; V 24: Henslow's IV 22; V 24, 60: Ipswich, V 24: Leconte's, IV 23; V 24: Peabody, *see* White-throated: Savannah, II 37; III 45; IV 22; V 24,

- 60: Seaside, V 27: Sharp-tailed, V 27: Acadian Sharp-tailed, IV 23; V 27: Song, II 21, 36, 62; III 44, 54; IV 23: V 27: Swamp, IV 23; V 27: Vesper, II 22, 37; III 44, 53; IV 22; V 24, 40: White-throated, II 22, 37, 62; III 44; IV 23; V 27
- Specimen records, III 4-5, 56
- Specimens, fixing, I 16: killing, I 15: preserving, I 7, 16
- Specularia perfoliata*, V 45
- Spiders, V 65-66
- Spiderwort, V 42
- Spoonbill, Roseate, I 32: note by P. M. REA, I 44-45
- Squirrel, Southern Fox, IV 66
- Star-grass, V 42
- Starwort, V 42
- Stegomyia fasciata*, I 23
- STEPHENSON, N. W., II 73; III 4, 9, 78; IV 14: Art of illustration, IV 50; V 7, 10: Exhibit of Japanese engravings, III 38-39: Oriental point of view in art, III 40; IV 11, 14
- STONE, SAMUEL G., V 12
- STONE, SAMUEL G. JR., III 13
- Storage collections, IV 44
- Strawberry, Indian, V 43
- Strix pratinecla*, III 15
- Study collections, I 3; IV 27
- Sugarberry, V 42
- Sundrops, Common, V 44
- Swallow, Bank, I 26; II 37, 63; III 46; Barn, II 63; III 46; IV 23; V 28: Rough-winged, IV 23; V 28, 68: Tree, II 37, 63; III 45; IV 23; V 28: White-bellied, *see* Tree
- Swan, Whistling, V 62
- Symplocos tinctoria*, V 44
- Syrnium varium allenii*, III 16
- Tallow Tree, III 33
- Tanager, Scarlet, II 62; V 28: Summer, II 62; III 45; IV 23, 31, 40, 41; V 28, 40
- Tantulus loculator*, I 34
- Taxidermist, V 5
- Taxidermy, IV 59-61
- TAYLOR, J. H., II 45, 74; III 12, 30, 47
- TAYLOR, MAY, IV 56, 74
- Telmatodytes palustris griseus*, III 54
- Tern, Black, II 58; III 46, 53; IV 18: V 16: Caspian, IV 18; V 15, 58: Common, I 34; II 58; IV 18; V 15: Foster's, V 15, 58: Least, II 58; III 46; IV 18; V 16: Royal, IV 18; V 15, 58
- Terry Fish Company, II 55
- THOMAS, H. H., III 8
- Thomson Auditorium, II 36, 40, 43, 44, 70; III 1, 78-79; IV 3
- THOMSON, JOHN, II 70; III 79; IV 67
- Thrasher, Brown, I 26; II 21, 36, 65; III 42; IV 25; V 31, 68
- Thrush, Gray-cheeked, V 32, 60: Hermit, I 26; II 22, 37, 66; III 45; IV 26; V 32: Olive-backed, V 32: Wilson's, III 53; IV 26; V 32: Wood, III 46, 54; IV 26; V 32
- Thryomanes bewickii*, III 54
- Thysanthera semiflosculare*, V 45
- Titlark, II 32, 37, 65; III 44; IV 25: V 30
- Titmouse, Tufted, II 21, 36, 66; III 42, 54; IV 26 40; V 32
- Towhee, I 26; II 21, 36, 62; III 42: V 27: Florida, IV 23; V 27: White-eyed, IV 23
- TOWNSEND, J. K., III 66
- Tradescantia Virginica*, V 42
- Travelling exhibits, iron and steel industry, III 68, 80; IV 7, 15, 74; V 10
- Trees, III 6, 10: Autumn foliage, by P. M. REA, V 63: Study of, V 63
- Trifolium agrarium*, V 43
- Trillium, V 42
- Trillium discolor*, V 42
- Tropic Bird, Yellow-billed, [Red billed] IV 65
- Tropidonotus lcheris*, V 54
- TRUE, F. W., IV 3: List of vertebrate animals of South Carolina, II 21
- Trumpets, V 42
- Tuberculosis exhibition, V 55, 56, 64
- TUOMEY, M., I 6; II 43; III 59, 60, 62, 63, 66
- Turkey, Domestic, I 27: Wild, I 27, 28; II 22; III 43; IV 20, 40; V 20: Yucatan, I 27-28
- Turkey Buzzard, *see* Vulture, Turkey

Turnstone, Ruddy, V 20
Tursiops tursio, III 68
 TWITCHELL, M. W., III 19
 Typhoid fever, II 22-25

UHLER, P. R., III 18
 University extension lectures, II 68,
 76; III 31, f32
 University of South Carolina, III 19
Urinator lumme, IV 73
 U. S. Dept. of Agriculture, V 52
 U. S. National Museum, III 31
 U. S. Weather Bureau, V 47, 49
Utricularia inflata, V 45; *radiata*, V 45

Vaccinium corymbosum, V 44
 VANHOVENBERG, ELIZABETH, V 39,
 53: Flower table in Museum
 library (Introduction by editor),
 V 41-45: Librarian's vacation in
 Maine, V 36, 69
 Venus' Looking-glass, V 45
 Vetch, V 43: Carolina, V 43
Vicia Caroliniana, V 43: *sativa* 43:
Terax, V 43
Viola lanceolata, V 44: *palmata*, V 44:
primulaefolia, V 44
 Violet, Blue, V 44: Lance-leaved, V
 44: White, V 44
Viorna Viorna, V 42
 Vireo, Blue-headed, IV 24; V 29:
 Red-eyed, I 26; II 63; III 45, 54;
 IV 24, 40, 41; V 28: White-eyed,
 II 63, 73; III 42, 54; IV 24, 40;
 V 29: Yellow-throated, III 46; IV
 24; V 29

VON DER LIETH, J. R., V 54
 Vulture, Black, I 26; II 22, 36, 59;
 III 42, 53; IV 20; V 21: Turkey,
 I 26; II 22, 37, 59; III 42, 53; IV
 20; V 21

Wake-robin, V 42
 WALTER, THOMAS, Grave of, note by
 P. M. REA, III 36; Visit to grave
 of, by EZRA BRAINERD, III 33-37
 WAMSLEY, F. W., II 75; III 48; 68,
 78; IV 3, 8; V 4, 40, 54
 WAMSLEY, GRACE, V 54
 Warbler, Bachman's, V 11, 29:
 Black and White, II 64; III 46, 64;
 IV 24; V 29: Blackburnian, I 26;

Black-poll, III 53, 54; IV 24; V
 29: Black-throated Blue, I 26;
 II 64; IV 24; V 29: Black-throated
 Green, V 30: Blue Yellow-backed,
see Parula: Cape May, V 29:
 Hooded, III 46, 53; IV 25, 42; V
 30: Myrtle, I 26; II 22, 37, 64; III
 44, 54; IV 24, 39; V 29: Palm, IV
 24; V 30, 60: Yellow Palm, IV
 24, 42; V 30, 60: Parula, II 37, 64;
 III 45, 54; IV 24, 39; V 29: Pine,
 II 21, 36, 64; III 42; IV 24; V 30:
 Prairie, III 46, 53; IV 24; V 30:
 Prothonotary, II 64; IV 24, 39,
 40, 42; V 29: Summer, *see* Yellow:
 Swainson's, II 37; III 46; IV 24;
 V 11, 29: Worm-eating, III 46; IV
 24; V 29: Yellow, I 26; II 37, 64;
 III 54; IV 24; V 29: Yellow-
 rumped, *see* Myrtle: Yellow-
 throated, II 22, 37, 64; III 42; IV
 24, 39; V 30

WARD, H. A., II 40, 43
 Water Snake, Common, IV 58: Red-
 bellied, IV 58
 Water-thrush, Grinnell's IV 24; V 30:
 Louisiana, II 65
 Water Turkey, IV 37
 Waxwing, Cedar, II 21, 36, 63; III
 44, 54; IV 23; V 28

WAYNE, ARTHUR T., II 21, 33, 55,
 67; III 4, 17, 19, 32, 41, 42, 48,
 54, 55, 78; IV 8, 63, 73; V 6, 11,
 14, 15, 37, 55, 67, 68

WAYNE, FRANCIS, V 54
 WEBBER, MABEL, IV 56
 WEEKS, LAURA L., V 63
 WEEKS, SARAH E., V 68
 Wesleyan University, III 18

WESTON, F. M. JR., II 45, 56; III 4,
 30, 54; IV 57, 64, 65, 73; V 4, 8, 11,
 40, 54, 55, 65: Demonstration of
 birds, II 73; III 30; V 63, 64:
 Rail family, V 64, 68: Summer
 bird records, V 67-68: Winter
 visitants, II 56

WESTON, F. M. JR., and REA, P. M.,
 Preliminary survey of the birds
 of the coast region of South Caro-
 lina, V 13-24, 27-32

Whale, Biscay, I 41: Black, I 41

- Whales and whaling, by P. M. Rea, I 38
- Whip-poor-will, IV 21; V 22
- WHITE, CHARLES HENRY, IV 50; V 7
- Wildcat, III 40
- Willet, III 43; IV 20; V 20
- WILLIAMS, ELLISON, V 54
- WILLIAMS, GEORGE W., IV f16; V f12
- WILLIAMS, HENRY P., IV f16, 57, 63; V f12
- WILLIS, EDWARD, II 31
- WILLIS, EOLA, Life of Dr. Shecut and origin of the Museum, II 27-32; III 57
- WILLSON, J. W., II 68; III 47
- WILSON, ROBERT, I 37; IV 31: Some ornithological notes, I 31-34: Appeal of Archaeopteryx, IV 32-33
- Wintergreen, Spotted, V 44
- Woodbine, V 45
- Woodcock, II 59; III 43; IV 19; V 19
- Woodpecker, Downy, II 22, 36, 60; Southern Downy, III 42; IV 21, 40; V 22; Pileated, II 36; III 43; IV 21, 38; V 22; Red-bellied, I 26; II 22, 60; III 43; IV 21, 40; V 22; Red-cockaded, II 36; III 43; IV 21; V 22; Red-headed, II 36, 60; III 42, 54; IV 21; V 22, 67; Southern Hairy, II 22, 60; III 43; IV 21, 40; V 22
- WOODRUFF, F. M., IV 66
- Wren, Bewick's, III 54; IV 25; V 31; Carolina, I 26; II 21, 36, 65; III 42; IV 25, 40; V 31; House, III 45, 53; IV 25; V 31; Long-billed Marsh, II 21, 36, 65; III 47; IV 25; Short-billed Marsh, III 45; IV 25; V 31; Worthington's Marsh, III 54; IV 25; V 31, 68; Winter, IV 25; V 31
- Xanthoxalis stricta*, V 43
- Yellow-bird, *see* Warbler, Yellow
- Yellow fever, I 23-25
- Yellow Hammer, *see* Flicker
- Yellowlegs, Greater, V 20; Lesser, V 20
- Yellowthroat, Maryland, *see* Southern; Northern, III 46; Southern, I 26; II 37, 65; III 43, 54; IV 25, 40; V 30
- Yucca aloifolia*, V 42
- Zamelodia melanocephala*, III 66; IV 10

